Original Article

Educational intervention for self-care of individuals with *diabetes mellitus**

Intervenção educativa para o autocuidado de indíviduos com diabetes mellitus

Intervención educativa para el autocuidado de individuos con diabetes mellitus

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ABSTRACT

Objective: To assess the knowledge, attitudes and practices of self-care in individuals with diabetes mellitus (DM) in a specialized health service in Belo Horizonte - MG, Brazil. **Methods:** The research was a case study with a qualitative approach. Data were collected by conducting focus groups with the participation of 12 individuals with diabetes and who attended three sessions of the educational program developed in this health service. **Results:** Data were analyzed using thematic analysis, which allowed the identification of the following categories: experiences; feelings; practical education for self-care associated with food and physical activity; perceived barriers to the pursuit of a healthy lifestyle; and expectations. **Conclusion:** The results of the study showed the importance of education and health communication guided the dialogical relations and appreciation of popular knowledge, by reorienting the educational practices for self care, in order to establish strategies for prevention and disease control.

Keywords: Knowledge; Attitude to health; Self care; Health education; Diabetes *mellitus*

RESUMO

Objetivo: Analisar conhecimentos, atitudes e práticas do autocuidado de indivíduos com Diabetes *mellitus* (DM) em um serviço especializado de saúde de Belo Horizonte - MG, Brasil. **Métodos:** Pesquisa do tipo estudo de caso com abordagem qualitativa. Os dados foram coletados por meio da realização de grupos focais com participação de 12 indivíduos com DM e que compareceram em três sessões do programa educativo desenvolvido nesse serviço de saúde. **Resultados:** Os dados, analisados segundo o enfoque da análise temática, possibilitaram a identificação das seguintes categorias: Experiências; Sentimentos; Prática educativa para o autocuidado, associada à alimentação e à atividade física; Barreiras percebidas para a busca de um estilo de vida saudável; e Expectativas**. Conclusão:** Os resultados do estudo mostraram a importância da educação e da comunicação em saúde pautadas nas relações dialógicas e na valorização do saber popular, ao reorientarem as práticas educativas para o autocuidado, de forma a estabelecer estratégias de prevenção e controle da doença.

Descritores: Conhecimento; Atitude frente à saúde; Autocuidado; Educação em saúde; Diabetes *mellitus*

RESUMEN

Objetivo: Analizar conocimientos, actitudes y prácticas del autocuidado de individuos con Diabetes *mellitus* (DM) en un servicio especializado de salud de Belo Horizonte - MG, Brasil. **Métodos:** Investigación de tipo estudio de caso con abordaje cualitativo. Los datos fueron recolectados por medio de la realización de grupos focales con la participación de 12 individuos con DM y que asistieron a tres sesiones del programa educativo desarrollado en ese servicio de salud. **Resultados:** Los datos, analizados según el enfoque del análisis temático, posibilitaron la identificación de las siguientes categorías: Experiencias; Sentimientos; Práctica educativa para el autocuidado, asociada a la alimentación y a la actividad física; Barreras percibidas para la búsqueda de un estilo de vida saludable; y Expectativas**. Conclusión:** Los resultados del estudio mostraron la importancia de la educación y de la comunicación en salud basadas en las relaciones dialógicas y en la valorización del saber popular, al reorientar las prácticas educativas para el autocuidado, de forma a estabelecer estrategias de prevención y control de la enfermedad.

Descriptores: Conocimiento; Actitude frente a la salud; Autocuidado; Educacion en salud; Diabetes *mellitus*

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INTRODUCTION

In Brazil, the prevalence of diabetes mellitus (DM) is increasing. Estimations forecast that by 2025 there will be approximately 11 million individuals with the disease. Therefore, initiatives promoting health are strategies to prevent and control the disease[1]. In order to implement a disease prevention and control strategy, the present study was developed based on the educational and behavioural theory, which proposes interventions that are guided by concepts such as knowledge, skills and attitudes regarding the disease, so that individuals with DM can perform self-care activities, which include frequent physical exercises and an eating plan.

Authors[2-4] argue that, when planning education programs on DM, it is essential to use educational theories involving behavioural approaches, that comprehend the cognitive, social and cultural construction of knowledge and skills.

Knowledge and attitudes towards the disease - learned through participatory approaches and innovative methodologies in the educational process - are important and sometimes essential for behavioural change[5-8].When assessing behavioural changes, we must consider individual values and opinions, as well as their expectations with regard to achieving social and psychological changes through their actions[5]. Considering such perspective, it is necessary that individuals with DM think about the disease and problematize treatment options, costs, risks and benefits involved in each of the available strategies, so as to enable them to decide on the therapeutic approach that best adapts to their daily lives.

Considering the fact that health education and behavioural approaches have deep effects on cognitive and psychological aspects of individuals with MD, the specialized ambulatory of the hospital in Belo Horizonte - MG has been planning educational activities aimed at developing knowledge, attitudes and practices related to self-care and self-control of the disease. Factors that inhibit the performance of activities are also approached.

The DM educational program was systematized through a group educational teaching strategy, which consists of a set of interventions aimed at the pathophysiology of the disease, its signs, symptoms, and complications, diet principles, physical activities, and psychological aspects related to behaviour change that helps control the disease.

During group meetings, the educational process was enriched by the use of games, which are excellent instruments of communication, expression and learning, and facilitate the knowledge acquisition, besides intensifying knowledge exchange[6]. The role of the multidisciplinary team in the group meetings was to develop topics in an integrated interdependent way, reinforcing contents and contributing to the interaction during the interventions.

The present study aimed to analyse knowledge, attitudes and educational practices associated with physical activities and a healthy diet, in order to explore experiences, needs and expectations of individuals with diabetes with regard to self-care issues, and the disease management.

METHODS

The research was designed as a descriptive and exploratory case study, with a qualitative approach, working with individuals with type 2 diabetes in both sexes, aged between 30 and 70, who were monitored at a referral hospital in Belo Horizonte (MG), and participated in the diabetes educational program in 2009. Other inclusion criteria were having an education level above the fourth grade of elementary school, and attending three educational sessions every two months.

Thus, 12 individuals participated in the focus group, which is a type of interview or conversation in homogeneous groups, with the objective of obtaining information based on group discussions and reflections, guided by a specific theme[9] proposed by the researcher. The focus group aimed to discuss knowledge, attitudes, and disease management practices, seeking to understand individuals' needs, expectations and experiences on self-care. An identification form was introduced to collect information such as the participants' sex, age, educational level and family income.

Two focus groups were conducted, involving 12 individuals, and lasting one hour. During the meetings, the following themes guided the researcher: knowledge and attitudes regarding DM; educational self-care practices, facilitators and barriers / difficulties, and suggestions to improve the educational programs.

The material produced by the focus groups was manually recorded, systematized and categorized in a database, considering the recurring opinions, disagreements and agreements. Further on, data were processed and interpreted, based on the theme analysis approach, according to its adapted version by Minayo[10].

The main categories found by the material analysis concern: experiences, feelings, and expectations of individuals with type 2 diabetes. Within the categories, sub-categories were created to group responses related to facilitators and barriers identified in self-care, and suggestions for improvements to the DM educational programs.

To ensure anonymity, participants adopted character names (bird, heart, telephone, flower, fish, among others), which were chosen by them through an initial dynamics, and expressed a certain meaning to each participant.

The research project was approved by the Research Ethics Committee of the Universidade Federal de Minas

Gerais, according to the Legal Opinion No 157/08. All participants signed an Informed Consent Term, as recommended by Resolution 196/96.

RESULTS

Most individuals with DM were females (77.8%), with incomplete elementary education (74.1%). The average age of subjects was 60.9 ± 8.4 years, and their family income was between one and three minimum wages.

Presentation of the categories with the obtained themes

Experiences

It was possible to verify that individuals with DM have little motivation to perform self-care activities in their daily routines, and have limited knowledge about the disease, and limited attitudes and information about nutrition and physical activities, as presented by the statements below.

Telephone: *"What I do know about the disease is that it is a silent disease that has no symptoms [...] a lot of sugar in the blood, and especially too much fat"*

Bird: *"If diabetes is too high, you get leg pains, your eyes hurt [...] your feet and hands crack, and you get tired."*

To achieve effective DM control, individuals must learn about the disease and have skills to solve problems, as well as be able to make daily decisions independently[8]. After their involvement and participation in the educational sessions, there were positive effects on the subjects' treatment. Participants reported what they learned about the disease:

Flower: *After I participated in the educational process, and had appointments with the doctor, there was an improvement in controlling the disease, and I decreased insulin [...] changed my eating habits [...] and stretch at home.*

Another important aspect that must be taken into account are the individuals' psychosocial factors about the disease, as shown below.

Feelings

Understanding the behaviour in relation to the disease therapy, and responding to its needs requires knowledge about their attitudes towards the disease and care. The feelings associated with DM psychological aspects can be observed in the statements below.

Fish: *I am very angry, I don't accept the disease, I don't control it, I don't take my medicines, I don't care [...] the disease overwhelms me too, I get very depressed. I have discovered I have Diabetes three years ago*

Heart: *[...] we should not get angry because we have diabetes, I've had it for 20 years and I got used to controlling it [...], if you know how to control it, you can live happy and healthy.*

Feelings include a non-acceptance of the disease, emotions, fear of problems, and self-blaming for not being receptive to the treatment. Thus it is important that health professionals know how to listen to the individuals' manifestations of feelings, asking about their concerns and explaining what can be done about it in order to make them calmer. In some statements, it is possible to observe the subjects' distrust about the possible causes or factors that increase the disease risk, such as the diet and lack of exercises. People have enormous difficulties changing eating habits, since they are have been part of their lives for generations and generations, which was identified in the individuals' speech.

Information and guidelines about knowledge and attitudes regarding the disease could promote a behavioural change, associated with a diet and physical activities. In the category below, it is possible to verify that self-care education was mentioned in the subjects' statements.

Educational self-care practice related to nutrition and physical activities

The core factor for a lifestyle change based on DM requirements may result from information and communications received by individuals, as described below.

Heart: *"Reduce food portions, pasta, candy, eat vegetables [...] eat lean meats [...] do not eat anything with sugar or candies"*

Telephone: *"Eating small portions from 3 to 3 hours, two to three meals. Limit fruit, because they have fructose, and leaves, you can eat a lot of them"*

Fish: *"Doing physical activities at least three times a week, and a 1-hour walk at least"*

It was possible to verify in the participants' statements that they have incomplete information with regard to diet and physical activities. To assist them through such changes, given the nature of the disease, the multidisciplinary team operating the educational program developed a dialogical, reflective and critical perspective, allowing individuals to have a broadened understanding about the possible risk factors associated with unhealthy habits such as a sedentary lifestyle, a poor diet and obesity, so that they can acquire autonomy regarding their living conditions and health.

Within this context, individuals refer to the difficulties

of carrying out the treatment regimen on a daily basis, as described below.

Perceived barriers to the pursuit of a healthy lifestyle

Barriers to adhering to the diet and physical activities included lack of family support, stress, work or occupation, safety, and the cost of gyms.

Banana: *"Time. I start work, and before I realize, it's after lunch time and I don't feel hungry [...] it is difficult to control and divide the food into small portions [...] and stop eating things that we like"*

Apple: *"Money [...] sometimes it's difficult for me to come to the group meetings and appointments because I don't have enough money to buy the bus ticket.*

Answers indicate that participants find it difficult to monitor the treatment due to the lack of pleasure of not eating what they want, and the financial issue. To fight such barriers and achieve favourable self-care results, healthcare professionals should continuously educate and support individuals, aiming to improve disease control, as suggested by the participants in the next category.

Expectations

In order to control metabolism, prevent acute and chronic complications, and improve quality of life, we seek educational approaches and individual life experiences with the disease. It is necessary to learn how to integrate individuals' knowledge and develop learning in everyday practice.

Telephone: *"We get a bit lost, but with a little guidance... that is the reason why I wanted to join the group, you know, because we don't know too much about the treatment"*

Fish: *"[...] talk, explain things to us, such as how we must make our meals, and what we cannot eat ".*

Participants' speech indicated the need for information on self-care education. When they lose contact with information, they feel that physical activities and the diet plan are harmed. In some interviews, we observed that the instructions given in group care, if repeated, demotivate participants. This reinforces the need for new approaches, dynamic games, and interactive features such as games and new teaching strategies.

The comments made by individuals after participating in the educational process reveal an appreciation for knowledge diversity, which facilitates interpersonal relationships, and information exchange in the group.

To maximize the therapeutic benefit of education, individuals with diabetes need an open and honest communication. Furthermore, they should be motivated to participate in educational programs on DM and connect with professionals, sharing experiences and information about their own behaviour and lifestyle habits. We also emphasize that there must be a relationship of trust between individuals and health care.

DISCUSSION

Participants identified that education is one of the important concerns for individuals with

DM, given the need for information about the disease, diet, treatment and physical activities to improve their ability to manage self-care. Effective DM education improves disease control and quality of life[5]. Numerous barriers impede good metabolic control, including poor understanding of the disease clinical aspects, not exercising, and difficulties changing the diet. The effort to improve self-care requires a "proactive and prepared team" enabling a better service to individuals with chronic diseases[11]. Effective communication between individuals and health professionals has been considered an important factor from the perspective of diabetes self-care.

Authors[12-13] suggest that group education strengthens the link between health professionals and individuals, improving their clinical condition. A continuous care and consistent information are recognized as clinically important. Still, some factors may affect behavior, such as the physical, and social environments and exposure to information.

Studies are needed and, consequently, health professionals should be aware of the importance of an individualized assessment of the factors that can inhibit a person's ability to perform self-care activities[6]. Individuals with DM live with this condition 24 hours a day, which emphasizes how essential self-care is. Therefore, the main purpose of professional orientation to DM patients is to encourage self-care activities when possible. Moreover, it is important to stimulate knowledge and skills acquisitions, so that individuals have confidence to take an active role managing their disease[14-16].

However, health professionals have difficulties involving a motivated and continuous team participation in the group initiatives, as well as the multiplication of such information to the public. Professionals need to be qualified for the educator role, with solid knowledge about clinics, communication skills, strategies, methodologies and the application of new practices[15]. To effectively control DM , professionals need to think about innovative strategies in their daily work, as well as individuals should be aware of risk factors and learn

about the disease, so as to be able to make independent decisions on a daily their daily routines.

The Ministry of Health[8] is developing a strategy for self-care education, focused on individuals with DM, through the construction of a network of tutors and multipliers, divided by regions, states and cities. The goal is to trigger an active methodology that impacts each professional and enables them to perform actions with the aim of developing individuals' autonomy regarding self-care, build skills and develop attitudes that lead to a continuous improvement of the disease control, achieving a gradual increase in quality of life and reducing disease complications.

In this context, the experience[11,16] accumulated since 2005 with the DM program is mainly due to the training and qualification of health professionals towards self-care education, with positive results, and the transmission of DM education, through individual and group care. The structured educational program model in the healthcare services, using diversified teaching strategies, methodologies, and an innovative dynamics that is interactive and playful is cost effective in preventing disease complications and improving quality of life[17].

A recent international systematic review[14,16] investigated the quality of strategies related to the quality of care. Several mechanisms have been analysed, such as reminders to the individual, education groups, individual electronic record, auditing, actions assessment, interventions return, and continuous education. All strategies have produced low to modest impact on levels of glycosylated haemoglobin. Another study[11] aimed to assess the impact of disease self-management and concluded that individuals who are positively encouraged in their actions are more confident when performing self-care.

In summary, individuals with DM need to think about educational practices, especially about how relevant they are for the construction of self-care. People should seek to develop skills in health education, as well as admit their difficulties, limitations, and the slow and progressive nature of any learning process, and thus obtain "results" that help improve the educational practice on DM self-care.

CONCLUSION

When considering the growing number of individuals with type 2 diabetes, and that poor metabolic control is a risk factor for disease-related complications, it is necessary to develop and implement educational measures to prevent and control the disease. DM education should provide key information that will help individuals acquire skills to control the disease by promoting a healthy lifestyle.

Multidisciplinary teams and motivated health workers, who are trained and able to help individuals overcome the barriers that impede improvements to self-care, provide conditions for learning, arranging appointments with short intervals, and always encouraging self-care seems to be a very promising way.

We hope the results of the present study can be multiplied to other healthcare units, and further on, to a distance specialization course. Every attempt should be made to identify ways to improve disease control involving to self-care activities in type 2 diabetes. The limitations of the study are associated with the dimensions of self-care education and health information.

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