

THE DIABETIC FROM THE HEALTH PROMOTION PERSPECTIVE

O diabético numa perspectiva da promoção de saúde

El diabético en la perspectiva de la promoción de la salud

Original Article

ABSTRACT

Objective: To identify the overall health and living conditions of diabetes patients, the main risk factors for the disease as well as the complications, difficulties, expectations and problems relating to health service monitoring, from the perspective of “Health Field” model. **Methods:** Descriptive, cross-sectional study conducted with 187 diabetes patients of both sexes, living in the urban area and enrolled at five Primary Healthcare Units of a municipality of Minas Gerais. Data was collected during home visits, applying an interview form created for diabetes patients, based on data from human biology, environment, lifestyle and health services’ organization, elements of the adopted model. Data was analyzed descriptively and presented as frequencies, averages and percentages. **Results:** Type 2 diabetes mellitus, female gender, age above 60, married status, incomplete elementary school education, and monthly income of less than three minimum wages were prevalent. Of the participants, 71 (41.5%) had abnormal glucose levels, 94 (55.1%) had blood pressure higher than recommendations and 131 (70.1%) were using oral hypoglycemic agents. Also, 138 (73.8%) did not exercise on a regular basis and 133 (71.1%) were overweight or obese. Living with family was reported by 141 (75.4%) participants and 100 (53.5%) reported participating in meetings. The family was the main source of support for 96 (65.8%) of them. **Conclusions:** The results raised discussions on the clinical conditions, expectations and difficulties experienced by the participants, and highlighted the challenge to be faced by healthcare professionals in order to maintain the compliance of healthcare users with the long-term treatment, typical of chronic conditions such as diabetes.

Descriptors: Diabetes Mellitus; Health Promotion; Chronic Disease.

RESUMO

Objetivo: Verificar as condições de vida e saúde de diabéticos, os principais fatores de risco para a doença, as complicações, dificuldades, expectativas e os problemas relacionados ao acompanhamento pelo serviço de saúde, numa perspectiva do modelo “Campo de Saúde”. **Métodos:** Estudo transversal descritivo com 187 diabéticos de ambos os sexos, residentes na zona urbana e cadastrados nas cinco Unidades de Atenção Primária à Saúde de um município de Minas Gerais. Os dados foram obtidos em visita domiciliária, utilizando um formulário de entrevista elaborado para diabéticos e sustentado em dados da biologia humana, ambiente, estilo de vida e organização dos serviços de saúde, elementos do modelo adotado. Submeteram-se os dados à análise descritiva e apresentados por meio de frequências, médias e porcentagens. **Resultados:** O diabetes mellitus tipo 2, o sexo feminino, a idade acima de 60 anos, o estado civil casado, o ensino fundamental incompleto e a renda mensal inferior a três salários mínimos foram prevalentes. Dos diabéticos, 71 (41,5%) apresentaram alterações glicêmicas; 103 (55,1%), pressão arterial acima do recomendado; e 131 (70,1%) usavam hipoglicemiantes orais. Dos participantes, 138 (73,8%) não praticavam atividade física regularmente e 133 (71,1%) apresentavam sobrepeso ou obesidade. A vida em família foi confirmada por 141 (75,4%) diabéticos e a participação em reuniões, por 100 (53,5%). A família representou a principal fonte de apoio social para 96 (65,8%) deles. **Conclusões:** Os resultados levantaram reflexões sobre as condições clínicas, expectativas e dificuldades enfrentadas pelos participantes, e ressaltaram o desafio a ser enfrentado pelos profissionais de saúde para a manutenção da adesão dos usuários do serviço ao tratamento de longo prazo, comum nas condições crônicas como o diabetes.

Descritores: Diabetes Mellitus; Promoção da Saúde; Doença Crônica.

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RESUMEN

Objetivos: Verificar las condiciones de vida y de salud de los diabéticos, los principales factores de riesgo para la enfermedad, las complicaciones, dificultades, expectativas y los problemas relacionados con el seguimiento por el servicio de salud, en una perspectiva del modelo “Campo de la Salud”. **Métodos:** Estudio transversal descriptivo con 187 diabéticos de ambos sexos, residentes en la zona urbana y registrados en las cinco Unidades de Atención Primaria en Salud de un municipio de Minas Gerais. Los datos fueron obtenidos a través de visitas domiciliarias, utilizando un formulario de entrevista elaborado para diabéticos y sustentado con datos de la biología humana, ambiente, estilo de vida y organización de los servicios de salud, elementos del modelo adoptado. Se sometieron los datos a un análisis descriptivo y se presentaron como frecuencias, medias y porcentajes. **Resultados:** La diabetes mellitus tipo 2, el sexo femenino, la edad superior a 60 años, el hecho de estar casado, la escuela primaria incompleta y el ingreso mensual inferior a tres salarios mínimos fue prevalente. De los diabéticos, 71 (41,5%) presentaron alteraciones de la glucosa, 103 (55,1%) la presión arterial por encima de lo recomendado y 131 (70,1%) utilizaron hipoglucemiantes orales. De los participantes, 138 (73,8%) no practicaban actividad física regularmente y 133 (71,1%) tenían sobrepeso u obesidad. La vida en familia fue confirmada por 141 (75,4%) diabéticos y la participación en reuniones, por 100 (53,5%). La familia representó la principal fuente de apoyo social para 96 (65,8%) de ellos. **Conclusiones:** Los resultados mostraron reflexiones sobre las condiciones clínicas, las expectativas y las dificultades afrontadas por los participantes, y resaltaron el desafío de ser afrontado por los profesionales sanitarios para la manutención de la pertenencia de los usuarios de los servicios para el tratamiento a largo plazo, común en las condiciones crónicas como la diabetes.

Descriptor: Diabetes Mellitus; Promoción de la Salud; Enfermedad Crónica.

INTRODUCTION

Diabetes mellitus (DM), chronic disease of slow progressive evolution, which affects millions of individuals worldwide, is a serious public health problem with high rates of mortality and costs involved in the control and treatment of its complications^(1,2).

According to estimates from the World Health Organization, the worldwide number of individuals with the disease in 2000 was 177 million, expected to reach 350 million in 2025. The worldwide mortality, which is around 800,000 per year, may be underestimated because the majority of death certificates attribute the cause of death to some of its complications, such as cardiovascular and cerebrovascular diseases. A more realistic estimate suggests about four million deaths a year worldwide, accounting for approximately 9% of the world total amount⁽³⁾.

In Brazil, the DM affects about six million diabetics, being among the ten leading causes of mortality attributable to non-communicable diseases, even considering the high prevalence of undiagnosed individuals and the large proportion of cases that, by the time they are diagnosed, already present complications^(4,5).

Similarly to most chronic conditions, DM can be prevented and many of its complications should be prevented at different levels of health care⁽⁶⁾.

The prevention and control of DM in Brazil are mainly developed in primary health care services and encompass a set of actions that cover promotion, prevention, diagnosis, treatment and rehabilitation. Prevention seeks exemption to the individual from the disease through actions of detection, control and weakening of risk factors, while health promotion adopts a broader approach, trying to identify the macro determinants of the health-disease process in an attempt to interventions that benefit health and quality of life. The idea of promotion involves strengthening the individual and collective capacity to handle the multitude of health conditions, from a broad view of the health-disease and its determinants. Its proposal is clearly social, political and cultural, and implies the articulation of technical and popular knowledge and the mobilization of institutional and community, public and private resources, across a broad range of policy, legislative, fiscal and administrative measures⁽⁷⁾.

In face of social, political and cultural challenges of such nature, in addition to the change in the epidemiological profile of the population and the failure of the biomedical paradigm in recent decades, health promotion emerges as a new way of thinking and practicing in health, which has been developing since the disclosure of the Lalonde Report, thus exerting a growing influence on the development of public health policies⁽⁸⁾.

In this perspective, the “Health field” conceptual model is highlighted, which advocates health actions, with the aim of enhancing the quality of life for individuals and the community, recommending a change in the focus of health activities by stating that there is no doubt that future improvements in the level of health depends mainly on a broader analysis of the problems of the area, by considering, along with the biological aspects, other factors that can contribute to the determination of disease and by acting through concrete policies⁽⁹⁾.

The “Health field” conceptual model is defined as a set of practices and knowledge that go beyond health services, pointing out the role of human biology, environment, lifestyle and the organization of health services in the health-disease determination, overcoming those who neglect the socioeconomic, psychological and cultural aspects, so

important in health promotion, prevention, treatment and rehabilitation^(8,10).

On the other hand, it is worth mentioning that, in spite of the innovative approach and the potential to changes, the principles of health promotion are not fully understood and implemented, a fact that has rendered the diabetic care to be, most of the times, primarily focused on drug treatment. Promotion and prevention are almost always forgotten, even within the Primary Care Health Unit.

These findings point to the impotence of the traditional strategies, stressing the need to incorporate new approaches in health services, able to motivate diabetics in fighting the disease. This challenge, however, requires a broad understanding of multiple factors, in order to enable the planning of public health focused on comprehensive care to this population, providing knowledge and health-promoting practices.

Given the above, this study aimed to observe the living and health conditions of diabetics, the main determinants of risk factors, complications, difficulties, problems and expectations regarding treatment and monitoring of the disease by the service, from the perspective of the four elements comprised in the “health field” model.

METHODS

Cross-sectional study with diabetic patients enrolled in the *Unidades de Atenção Primária à Saúde - UAPS* (Primary Health Care Units) in a municipality of Minas Gerais.

Of the total of 449 diabetic patients enrolled in the five UAPS, a random sample was selected, stratified by unit, considering an error margin of 5%, totaling 208 diabetics. The random allocation of participants per unit was made according to the following inclusion criteria: patients with DM type 1 and 2 (DM1 and DM2), of both sexes, living in the urban area, being enrolled in one of five UAPS in the municipality and willing to participate in the study by signing the Free Informed Consent Form. Of this total, 187 diabetics were investigated in this study, due to difficulties such as the absence at the time of the visit or refusal to participate.

To obtain the data, a form was elaborated containing closed and open questions related to the DM and structured according to the four elements that make up the “Health field” model⁽⁹⁾, namely: data on human biology (classification and time since diagnosis of diabetes, weight, height, blood pressure, blood glucose, drug treatment, risk factors and concomitant diseases, complications), the environment (number of residents in the household, household income, education, occupation); lifestyle (diet, alcohol, smoking, physical activity, sexual activity, leisure and social changes

after diagnosis), and related to the organization of health services (use of public health services, medications, participation in diabetic meetings, knowledge about the disease, difficulties, use of social support networks and opinion on the health service). Data was collected in home visits, previously reported by Community Health Agents of UAPS in the period from May to July 2009.

At the time of the visit, besides the application of the interview form, weight, height, blood pressure and blood glucose were assessed. For measuring the height and weight were used a tape and an analog portable scale up to 120 kg, GeomTM. From the results obtained, body mass index (BMI) was calculated, which consists in dividing the square of body height (m²) into the body weight (kg), being classified as underweight (BMI <18.5 kg/m²), normal (BMI 18.5 to 25 kg/m²), overweight (BMI > 25 kg/m² and <30 kg/m²) and obesity (BMI > 30 kg/m²)⁽¹¹⁾.

Blood pressure was obtained with aneroid sphygmomanometer, standard BDTM, calibrated with a cuff appropriate to the arm circumference. The measurement was always performed on the left arm, being the person seated and with the arm supported. The categorization of blood pressure was based on the recommendation to intensify its control, in the presence of DM, to levels ≤ 130x80mmHg^(3,4).

The capillary blood glucose (CBG) test was performed with glucometers and strips of brand Accu-Chek Active, provided by the local Department of Health. The blood glucose level was considered the fasting level (when referring diabetic fasting for at least 8 hours) and the casual one (when performed at any time of day, regardless of meal times). In this case, the reference values were ≤126mg/dL and ≤200mg/dL, respectively⁽¹²⁾.

The results were stored in statistical software Statiscal Package for the Social Sciences (SPSS), version 14.0 for Windows, and the variables were subjected to descriptive analysis using frequencies, averages and percentages.

The study was approved by the local Secretaria Municipal de Saúde (Municipal Department of Health) and approved by the Comitê de Ética em Pesquisa da Universidade de Franca (Research Ethics Committee of the University of Franca), under protocol 005/09.

RESULTS

Taking as reference the “Health field” model and the objectives proposed by the study, the results are presented according to the sequence of data obtained.

By the identification data (Table I), it is observed that 154 (82.3%) were female, with a greater proportion in almost all age groups. The majority, 108 (57.8%) were aged over 60 years, 81 (43.3%) were married and 76 (40.7%) were widowed.

Table I - Diabetics enrolled in the *Unidades de Atenção Primária à Saúde - UAPS* (Primary Health Care Units) according to age range, civil status and sex. Minas Gerais, 2009.

	Sex				
	Female		Male		Total
	n	%	n	%	n
Age range					
- 20 years	01	0.5	02	1.0	03
20 - 40 years	11	5.9	-	-	11
40 - 60 years	45	24.0	20	10.8	65
> 60 years	97	51.9	11	5.9	108
Civil status					
Married	60	32.0	21	11.3	81
Widowed	70	37.5	06	3.2	76
Single	15	8.0	05	2.7	20
Divorced	09	4.8	01	0.5	10
Total	154	82.3	33	17.7	187

Table II - Pharmacological treatment adopted by diabetics enrolled in the *Unidades de Atenção Primária à Saúde - UAPS* (Primary Health Care Units). Minas Gerais, 2009.

Pharmacological treatment	n	%
OH*	131	70.1
OH* + Insulin	24	12.8
Insulin	22	11.8
None	10	5.3
Total	187	100

* Oral Hypoglycemics

Table III - Diabetics' opinion about the DM monitoring and acompanhamento e treatment in the *Unidades de Atenção Primária à Saúde - UAPS* (Primary Health Care Units) of a municipality of Minas Gerais. 2009.

Opinion	n	%
Satisfied	116	62%
Unsatisfied	57	30.5%
No opinion	14	7.5%
Total	187	100%

Regarding the data on human biology, including all aspects of physical and mental health, as a result of man's basic biology and organic constitution of the individual, which contribute to all types of diseases, it could be observed that 178 (95.2%) reported DM2; 07 (3.7%), DM1; and 02 (1.1%) did not know. The average time since the diagnosis of diabetes was 9.1 (\pm 6.5) years.

The results showed 103 (55.1%) diabetic patients with blood pressure above the recommended and 133 (71.1%) overweight or obese, factors that contribute to increase

the risk of cardiovascular complications, especially when associated with DM.

Of the 171 CBG tests performed, 09 were fasting and 162 casual, of which 04 (44.4%) and 67 (41.4%) had values above the recommended levels (12) (\leq 126mg/dL and \leq 200mg/dL, respectively).

By Table II, 131 (70.1%) reported making use of oral hypoglycemic agents for blood glucose control, which can be explained by the high frequency of DM2; 24 (12.8%) were already in need of the association between oral

hypoglycemic agents and insulin, revealing the progressive impairment of DM.

The data related to risk factors and concomitant diseases showed relative frequency greater than 100%, due to the fact that any individual could state the presence of more than one of these items. Among the most cited, 127 (70.9%) reported a family history of cardiovascular, 125 (69.8%), hypertension, 92 (51.4%), physical inactivity, and 43 (24.0%), overweight or obesity. The complications of the disease were reported by 53 (28.3%) participants, being more frequent: depression, kidney disease, stroke, acute myocardial infarction, diabetic foot, retinopathy, glaucoma, cataracts, neuropathy and other diseases related to the cardiovascular system.

The data related to the environment, which includes health-related aspects that are external to the human body, belonging to the social and physical environment or which individuals have little or no control over, showed that 141 (75.4%) participants lived in own home, with family, with an average of 2.8 (\pm 1.3) persons per household, 134 (71.6%) had family incomes below three minimum wages, 49 (26.6%) were illiterate, 108 (57.6%) had incomplete primary education, and 141 (75.4%) were retired or out of work.

The lifestyle, another element considered in the model adopted, consists in the set of decisions taken by the individual, affecting their health and which he has more or less control about. From the point of view of health, personal habits and bad decisions can trigger risks originated by the individual and may result in health-destructive acts that contribute to the increased level of disease and premature death.

When evaluating the dietary habits of the participants, there was an average of four (\pm 1.1) meals/day. The daily intake of sugar was reported by 99 (52.9%) individuals, being the coffee the primarily responsible for its consumption.

The indiscriminate addition of sodium in foods was reported by 78 (41.7%), considering the recommended limit of 6g/day⁽³⁾. The difficulty for the daily consumption of fruits was justified by the purchase price and 118 (63.1%) said they did not follow any kind of diet prescribed by a doctor or nutritionist.

Of the participants, 138 (73.8%) did not exercise regularly, 17 (9.1%) confirmed the consumption of alcoholic beverages, and 23 (12.3%), of cigarettes, while 69 (36.9%) developed leisure activities and relaxation in their daily life and 27 (14.4%) showed changes in social activities after the diagnosis of the disease.

Regarding sex life, 72 (38.5%) reported being active and 06 (5.2%) considered the influence of DM on their sexuality.

According to the model adopted, the organization of health services consists in the quality, quantity, management, nature and relationships of people and resources in providing health care. Usually, it is defined as a system of health care at different levels.

All respondents reported making use of public health services for treatment, although 42 (22.5%) claimed to have private plan. The information report on the disease diagnosis was obtained in a public health institution by 152 (80.6%). The medical supervision for the treatment of DM was reported by 139 (74.3%), and 91 (48.75%) reported having used the UAPS in the last appointment.

The drugs most used were oral hypoglycemic, cardiovascular drugs and diuretics, with acquisition made almost entirely in the public sector.

The main difficulties for the monitoring and treatment of disease, stated by 58 (31%) diabetics were related to financial issues regarding food and medicines purchasing and to dietary incompatibility with their preferences.

Participation in meetings for diabetics, scheduled by the UAPS, was confirmed by 100 (53.5%) participants, who attributed importance to the acquisition of information, explanations and assistance on metabolic control. Those who did not participate alleged lack of time and motivation, repetition of information or the fact that meetings were not provided in the units they were registered in. Sufficient knowledge about the disease was reported by 171 (91.4%) participants.

The family was the main source of social support reported for coping with the disease - 96 (65.8%) participants - followed by the UAPS, church and various support groups.

When asked about the health service they were enrolled in (Table III), 57 (30.5%) respondents confirmed some type of dissatisfaction and most of them suggested hiring doctors and diminishing their turnover into the UAPS, as well as greater agility within the units and in scheduling the specialized appointments. The majority, 116 (62%), which stated being satisfied, highlighted the positive way they were treated by the health team, the examinations provided and drug distribution.

DISCUSSION

The higher incidence of DM in women corroborates data from other studies^(13,14), although it has already been pointed out the disappearance of the difference in overall prevalence of DM between the sexes, due to results that showed a higher prevalence of DM pre-diagnosed among women and higher prevalence of newly-diagnosed DM among men, rendering the total prevalence between sexes

more similar. Another study also showed a greater ignorance of the disease among men and increased access to health services for diagnosis by women⁽¹⁵⁾. Women are more careful and more present in the health services, facilitating the diagnosis and suggesting a greater concern for their own health⁽¹⁶⁾.

The predominant age group above 60 years, observed in the study, has been associated with population aging in Brazil, which began setting up a new user profile in health services and the need for planning the assistance with focus on multidimensional and comprehensive attention^(14,17).

The greater occurrence of married and widowed individuals in this study can be justified by the predominance of people aged above 20 years. It is believed that spousal support is essential in the process of adaptation to the disease and adherence to care, with a view to minimizing complications. The loss of one's mate, on the other hand, can interfere in the management of the disease, since, in some cases, it can trigger depression, discouragement and loss of will to live⁽¹⁸⁾.

From the data on the contribution of human biology in the development of chronic diseases such as diabetes - today regarded epidemic and likely to be diagnosed at any age, usually associated with increased rates of overweight and obesity and changes in lifestyle - it is estimated that 90% to 95% of all cases are type 2⁽³⁾. The study results confirm this assertion.

Hypertension affects both sexes and its prevalence increases with age. When associated with DM, maintaining blood pressure levels above recommended makes diabetics more susceptible to complications such as the development of macrovascular and microvascular lesions, underscoring the importance of prevention against cardiovascular disease, renal and diabetic retinopathy^(3,19,20). It is believed that the education of individuals with chronic disease is the best way to reduce these injuries⁽¹⁹⁾.

Overweight and obesity seen among the participants contribute to the increased risk of cardiovascular complications, especially when associated with hypertension, since they represent a premorbid state of DM2⁽²¹⁾. Assistance in such cases should focus on the causes and complications and, once established the associated risk, the motivation for weight loss should be addressed, underpinned by interventions on diet and by physical activity⁽³⁾.

Although most of the results concerning blood glucose in this study have been within acceptable levels, it is important to consider the high proportion of those who had levels beyond the recommended goals. This situation may favor the establishment and development of chronic complications, micro and macrovascular complications, especially in patients with obesity and hypertension,

increasing the risk of multiple abnormalities that characterize the metabolic syndrome⁽³⁾.

Whether measures based or not on drugs administration become part of DM treatment, alone or in combination, taking into consideration the individual characteristics of the patient and stage of the disease⁽²²⁾, especially DM2, blood glucose control can be achieved by changes in lifestyle, including smoking cessation, increased physical activity and proper nutrition. However, due to the difficulty of adherence to non-pharmacological treatment and gradual loss of secretory capacity of the pancreatic beta cell, which generally occurs with the progression of the disease, it becomes necessary to introduce drug therapy⁽²³⁾.

When considering risk factors and concomitant diseases for the aggravation of micro and macrovascular complications of DM, it is important to highlight the progression of the disease in the onset of these complications. The diabetic macroangiopathies (atherosclerotic vascular disease, coronary heart disease, peripheral arterial disease and stroke) can occur even in early stages and be present in a diffuse and severe way. They are primarily responsible for the morbidity and mortality of diabetic patients, who have a penchant two to four times higher for dying from heart disease compared to non-diabetics, and are four times more likely to develop peripheral vascular disease and stroke. Microangiopathic complications, such as eye problems, kidney disease and neuropathy, can be developed over time^(3,4,24).

Depression as a risk factor has a direct impact on metabolic control and reinforces the need for treatment, in order to achieve beneficial effects on adherence to medical guidelines, improving glycemic control and indirectly reducing the risk of chronic complications of disease⁽²⁵⁾.

Diabetic retinopathy is the leading cause of blindness and is a common complication found after 20 years of disease in over 90% of people with type 1 diabetes and in 60% of those with DM2. Blood glucose control and blood pressure within recommended levels are demonstrably protective factors for vision in diabetics⁽³⁾.

The results regarding the influence of environmental aspects on compromising health, treatment adherence and the development of chronic complications corroborate those of other authors^(14,26). They reinforce the influence of the family as the central institution in the management and treatment of disease, strengthening the need for their inclusion in educational activities⁽²⁷⁾.

The development of diabetes is not associated with schooling and can affect people of all socioeconomic levels. However, one can't fail to consider the influence of low income and education on the lives of diabetics, especially in relation to drug procurement, diet maintenance, access to information and technology to control the disease,

understanding the therapeutic orientations and consequently, to the follow-up and treatment adherence^(14,28).

These considerations reinforce the challenge for health professionals in order to offer an approach to the disease in a comprehensible way, according to the needs of each individual⁽²⁸⁾.

Another fact observed in a study seeking to understand the changes that occur in the lives of diabetics after retirement was a high rate of utilization of health services by this population, suggesting difficulty in metabolic control. Right now, it is important for encouraging greater social interaction, believing that the exchange of experiences resulting from this interaction contributes to improved self-esteem, control of diseases and developing risk disease⁽²⁷⁾.

According to data on lifestyle, related to the set of individual decisions that affect the health of diabetics and might possibly provide some degree of control, there is a consensus on the influence of diet, obesity, alcohol consumption, smoking and physical inactivity. Changes in these factors may prevent or delay the onset of the disease or delay its complications, favoring the improvement in quality of life and reducing costs to the health system^(3,20).

Diabetics are resistant to dietary changes, even with awareness of the importance and necessity of limitations to achieve metabolic control, insisting in habits built throughout life and influenced by the society and their family. The family is essential in this change, that may happen slowly and with setbacks, and its members need to review their eating habits in benefit of a more suitable food for diabetics⁽²⁹⁾.

Nutritional needs vary from person to person and there is not an eating plan pattern for the individual with diabetes. Nutrient intake should be based on nutrition assessment, metabolic profile, weight and treatment goals, and be adjusted to exercise and drug therapy. This practice aims to reduce glucose oscillations and significant risk of hypoglycemia, favoring metabolic control and improved quality of life⁽²⁰⁾.

Alcohol, in excessive amount, can enhance the development of vascular changes, and smoking, isolated or associated with other risk factors, is also an important cause of cardiovascular mortality and may increase the risk of macrovascular complications of DM and the incidence of peripheral vascular disease⁽²⁰⁾.

Regular exercise can prevent the onset of DM2 in individuals at high risk, the aerobic ones being the most recommended^(3,4,20). Unfortunately, the practice of this exercise is not part of the life routine for most diabetics, despite the recognition of its benefits, such as better blood glucose control, independent of body weight loss, decreasing cardiovascular risk and the need for oral hypoglycemic, and

improving self-esteem and quality of life. The high rates of physical inactivity among participants (73.8%) of the study was justified by discouragement, tiredness, lack of time, leg pain, among others, and walking was the activity most frequently mentioned by those who were physically active.

Erectile dysfunction is a common condition among diabetics, with prevalence increasing along with age and early onset in comparison to the population in general. Approximately 30% to 75% present this dysfunction, while half of those are not aware of the existence of the problem and only 10% are treated. It commonly occurs as a result of vascular, neurologic, hormonal and psychological compromise⁽³⁰⁾. The sexual health of women is less investigated, increasing the importance of the approach and encouragement to talk about their sexual problems during consultations, mainly by the common set of symptoms of depression⁽³¹⁾. By the answers of the study, one can see that many participants showed embarrassment and discomfort when questioned on this subject.

Leisure activities, which also positively influence the treatment of DM, depict a set of activities performed after the daily chores and obligations, including various forms of expression, representing a voluntary adherence, with freedom of choice, creativity, satisfaction, fun and stress reduction⁽³²⁾. The most frequently mentioned by the participants were: watching television and walking with relatives, friends and neighbors; justifications for those who reported not having that kind of activity were: lack of time, fatigue or dislike leaving home.

The study results also showed that almost all participants used the UAPS for diagnosis and treatment of disease. This finding reinforces the idea that, although the diabetic care can be provided at various levels of health care, it has been focused on primary care. For the treatment of DM, it is essential to link the patient to the care units, to guarantee the diagnosis and the treatment by updated professionals in order to ensure control of the complications and progress of the ones already existing⁽⁴⁾.

The high number of diabetic patients using drugs resembles the findings of another study conducted in the state of Minas Gerais⁽¹³⁾, which was highlighted the need for training the UAPS health staff to provide adequate guidance as to the proper use and adverse effects of medications, and the need for adherence to treatment.

The difficulties verbalized by the participants regarding the monitoring and treatment of disease also resemble those already found^(13,33). The way diabetics realize the disease is not always the same for everyone, and many are resistant to the changes required by the treatment. One of the strategies to work perceptions are group meetings, which allow the exchange of experiences, encouraging interaction, learning and the ability of self-perception and modification. The

educational process requires knowledge of reality and planning of participatory activities, but the approach should not be limited to the transmission of knowledge; it must encompass the emotional, social and cultural factors that influence the treatment maintenance^(14,22,34).

The influence of low income, the difficulty of accepting the disease, rejection and denial of the condition's chronicity, suffering, anger due to restrictions imposed by the disease and the need to adopt healthy habits that allow dealing with the limitations must also be taken into consideration^(13,35).

Most diabetics in the study said they had enough knowledge about DM, although the results provided evidence of the presence of comorbidities and complications of the disease and pointed to the fact that knowledge does not necessarily translate into practice for health benefit.

In a study that assessed the knowledge of diabetic patients about the disease, before and after the implementation of a diabetes education program, a significant increase in knowledge was observed after running the program, however, not leading to changes in patients' lifestyle, concluding that, although the diabetics' knowledge about their disease is the basis of self-care, it does not necessarily result in behavior change⁽³⁶⁾.

The family as a primary source of support reported by participants corroborates studies on social support for adults with chronic illnesses, one being held in a Brazilian population with heart disease⁽³⁷⁾.

The more the complexity of DM is known, more recognizable is the importance of involving the diabetic individual, their family and the healthcare team to ensure metabolic control, essential for longevity, quality of life and prevention of chronic complications of disease⁽³⁾.

The opinions of the diabetics investigated regarding the health facilities where they were monitoring the DM demonstrated that the accolades and the claims were directed to the model of attention, which is mainly biomedical, at the expenses of health promotion actions. This view corroborates considerations⁽³⁸⁾ that the way services and health activities are organized is still characterized by the focus on individual treatment and recovery from diseases, centered in the medical staff, and with high demand for the use of expensive diagnostic and therapeutic methods.

The actions of health promotion in primary care should be focused on the individuals and their families, on vulnerable groups and the physical and social environment of the territory, with the responsibility to provide answers in the health field and mobilize partnerships and intersectoral articulations. To place the promotion of health care in the line of attention, facing chronic diseases such as DM, necessarily implies providing autonomy to the subject for the selection of healthier ways of living.

CONCLUSION

The results enabled the establishment of an overview of the reality studied and raised some reflections on the living conditions and health of the diabetics; on the major determinants of risk factors, difficulties, problems and expectations faced by this population group, strengthening the conviction that a comprehensive approach for the early detection of diabetes and minimizing the complications, through actions that include promotion, prevention, diagnosis, treatment and rehabilitation, are of utmost importance.

This task is not easy, since it requires a paradigm shift in how to approach the patients, capable of promoting their empowerment, through a model of health education focused not only on the professional knowledge, but on the knowledge and experiences of their own, thus setting value, above all, on their participation in disease control and lifestyle modification.

The challenge faced by professionals in relation to poor adherence to the long-term treatment, common in DM, brings out the need for training to respond to a monitoring action plan, supported by a multidisciplinary action, in order to deal with the complexity of primary care in the patient's personal, family and social context, paying attention to prevention and health promotion, but not neglecting curative and rehabilitative care.

Therefore, it is necessary to know the internal resources (material, emotional, cultural values), external (support networks, database), the professional context, work organization, expected outcomes, needs to be fulfilled, the performance criteria, among others. Such knowledge may facilitate the development of a critical consciousness and planning a program that features the participation of the team, the patient and his family.

All change takes time, and additionally in this case, the allocation, development and training of the teams involved, and the population as well, for it brings along the entrenched patterns of the biomedical model, to the detriment of health promotion.

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REFERÊNCIAS

1. Francioni FF, Silva DGV. O processo de viver saudável de pessoas com diabetes mellitus através de um grupo de convivência. *Texto Contexto Enferm.* 2007;16,(1):105-11.

2. Pilger C, Abreu IS. Diabetes mellitus na infância: repercussões no cotidiano da criança e de sua família. *Cogitare Enfermagem*. 2007;12(4):494-501.
3. Sociedade Brasileira de Diabetes - SBD. Tratamento e acompanhamento do Diabetes mellitus: diretrizes da Sociedade Brasileira de Diabetes. Rio de Janeiro: Diagraphic Editora; 2007.
4. Ministério da Saúde (BR), Secretaria de Atenção à Saúde, Departamento de Atenção básica. Diabetes Mellitus. Brasília; 2006.
5. Georg AE, Duncan BB, Toscano CM, Schmidt MI, Mengue S, Duarte C, Polanczyk C. Análise econômica de programa para rastreamento do diabetes mellitus no Brasil. *Rev Saúde Pública*. 2005;39(3):452-60.
6. Ministério da Saúde (BR). A vigilância, o controle e a prevenção das doenças crônicas não-transmissíveis: DCNT no contexto do Sistema Único de Saúde brasileiro. Brasília; 2005.
7. Buss PM. Uma prática ao conceito de Promoção da Saúde. In: Czeresnia D, Freitas CM. (Org.). *Promoção da saúde: conceitos, reflexões, tendências*. Rio de Janeiro: Fiocruz; 2003. p. 15-38.
8. Carvalho SR. As contradições da promoção à saúde em relação à produção de sujeitos e a mudança social. *Ciênc Saúde Coletiva*. 2004; 9(3):669-78.
9. Lalonde M. A new perspective on the health of Canadians: a working document: health and Welfare Canada. Ottawa; 1974.
10. Guimarães FPM, Takayanagui AMM. Orientações recebidas do serviço de saúde por pacientes para o tratamento do portador de diabetes mellitus tipo 2. *Rev Nutrição*. 2002; 15(1):37-44.
11. World Health Organization - WHO. Obesity: Preventing and managing the global epidemic. Geneva: World Health Organization; 2000.
12. American Diabetes Association - ADA. Diagnosis and classification of diabetes mellitus. *Diabetes Care*. 2007;30(1):42-7.
13. Tavares DMS, Rodrigues FR, Silva CGC, Miranzi SSC. Caracterização de idosos diabéticos atendidos na atenção secundária. *Ciênc Saúde Coletiva*. 2007;12(5):1341-52.
14. Gandra FPP, Silva KC, Castro CF, Esteves EA, Nobre LN. Efeito de um programa de educação no nível de conhecimento e nas atitudes sobre o diabetes mellitus. *Rev Bras Promoç Saúde*. 2011;24(4):322-31.
15. Goldenberg P, Schenkman S, Franco LJ. Prevalência de diabetes mellitus: diferenças de gênero e igualdade entre os sexos. *Rev Bras Epidemiol*. 2003;6(1):18-28.
16. Batista MCR, Priore SE, Enriqueta L, Rosado FPL, Tinôco ALA, Franceschinis SC. Avaliação dos resultados da atenção multiprofissional sobre o controle glicêmico, perfil lipídico e estado nutricional de diabéticos atendidos em nível primário. *Rev Nutr*. 2005; 18(2):219-28.
17. Veras R. Envelhecimento populacional contemporâneo: demandas, desafios e inovações. *Rev Saúde Pública*. 2009;49(3):548-54. Rossi VEC, Pace AE, Hayashida M. Apoio familiar no cuidado de pessoas com Diabetes Mellitus tipo 2. *Ciência et Práxis*. 2009;2(3):41-6.
18. Silva DB, Souza TA, Santos CM, Jucá MM, Moreira TMM, Frota MA, Vasconcelos MMV. Associação entre hipertensão arterial e diabetes em centro de saúde da família. *Rev Bras Promoç Saúde*. 2011; 24(1):16-23. American Diabetes Association - ADA. Standards of medical care in diabetes. *Diabetes Care*. 2009;32(Suppl 1):13-61.
19. Feldstein AC, Nichols GA, Smith DH, Stevens VJ, Bachman K, Rosales GA, Perrin N. Weight Change in Diabetes and Glycemic and Blood Pressure Control. *Diabetes Care*. 2008;31:1960-5.
20. Rêgo MAB, Nakatani AYK, Bachion MM. Educação para a saúde como estratégia de intervenção de enfermagem às pessoas portadoras de diabetes. *Rev Gaúcha Enfermagem*. 2006;27(1):60-70.
21. Lyra R, Oliveira M, Lins D, Cavalcanti N. Prevenção do diabetes mellitus tipo 2. *Arq Bras Endocrinol Metab*. 2006;50(2):239-49.
22. Santos VP, Caffaro RA, Pozzan G, Saieg M, Júnior VC. Comparative histological study of atherosclerotic lesions and microvascular changes in amputated lower limbs of diabetic and non-diabetic patients. *Arq Bras Endocrinol Metab*. 2008;52:1115-23.
23. Katon W, Russo J, Lin EHB, Heckbert SR, Karter AJ, Williams LH et al. Diabetes and Poor Disease Control: Is Comorbid Depression Associated With Poor Medication Adherence or Lack of Treatment Intensification? *Psychosomatic Medicine*. 2009;71:965-72.
24. Otero LM, Zanetti ML, Teixeira CRS. Características sociodemográficas e clínicas de portadores de diabetes em um serviço de atenção básica à saúde. *Rev Latinoam Enferm*. 2007;15(Esp):768-73.

25. Ríz PML. Aposentadoria e as mudanças de vida das pessoas com diabetes mellitus do tipo 2 [tese]. Ribeirão Preto: Universidade de São Paulo, Escola de Enfermagem de Ribeirão Preto; 2007.
26. Oliveira KCS. Conhecimento e atitudes de usuários com diabetes mellitus do tipo 2 e hipertensão arterial em uma Unidade Básica de Saúde de Ribeirão Preto [tese]. Ribeirão Preto: Universidade de São Paulo, Escola de Enfermagem de Ribeirão Preto; 2009.
27. Pontieri FM, Bachion MM. Crenças de pacientes diabéticos acerca da terapia nutricional e sua influência na adesão ao tratamento. *Ciênc Saúde Coletiva*. 2010; 15(1):151-60.
28. Moreira Jr ED, Abdo CHN, Torres EB, Lobo CFL, Fittipaldi JAS. Prevalence and correlates of erectile dysfunction: results of the Brazilian study of sexual behavior. *Urology*. 2001;58(4):583-8.
29. Bitzer J, Alder J. Diabetes and female sexual health. *Women's Health*. 2009;5(6):629-36.
30. Marcelino NC. Estudos do lazer. 2ª Ed. Campinas: Autores Associados; 2000.
31. Tavares DMS, Drumond FR, Pereira GA. Condições de saúde de idosos com diabetes no município de Uberaba, Minas Gerais. *Texto Contexto Enferm*. 2008;17(2):342-9.
32. Silva ASB. Avaliação da atenção em diabetes mellitus em uma Unidade Básica Distrital de Saúde de Ribeirão Preto-SP [tese]. Ribeirão Preto: Universidade de São Paulo, Escola de Enfermagem de Ribeirão Preto; 2009.
33. Péres DS, Santos MA, Zanetti ML, Ferronato AA. Difficulties of diabetic patients in the illness control: feelings and behaviors. *Rev Latinoam Enferm*. 2007;15(6):1105-12.
34. Otero LM, Zanetti ML, Ogrízio MD. Conhecimento do paciente diabético acerca de sua doença, antes e depois da implementação de um programa de educação em diabetes. *Rev Latinoam Enferm*. 2008;16(2):231-7.
35. Moraes TPR, Dantas RAS. Avaliação do suporte social entre pacientes cardíacos cirúrgicos: subsídio para o planejamento da assistência de enfermagem. *Rev Latinoam Enferm*. 2007;15(2):323-9.
36. Moraes Neto OL, Castro AM. Promoção da Saúde na Atenção Básica. *Rev Bras Saúde Família*. 2008;9(17):6-9.

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