SOCIODEMOGRAPHIC AND CLINICAL CHARACTERISTICS OF A DIABETIC POPULATION AT A PRIMARY LEVEL HEALTH CARE CENTER[1]

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This study aimed to analyze the social-demographic, clinical and life habits characteristics of a diabetic population being treated in the primary level of a healthcare center. A total of 52 diabetic patients, enrolled, in 2006, in a Research and Extension Center linked to a University in Sao Paulo, participated in the study. The data were collected through interviews, using appropriated forms, after the patients consent. The results showed other illness associated to diabetes and an unsatisfactory metabolic control. These data can support health professionals' actions in order to effectively prevent and manage diabetes in the basic health services. The conclusion, in face of the obtained results, is that there is the need to develop courses to the health professionals of education in diabetes, aiming to meet the complexity of the care and progression of the disease in this clientele.

DESCRIPTORS: diabetes mellitus; health education; chronic disease

CARACTERÍSTICAS SOCIODEMOGRÁFICAS Y CLÍNICAS DE UNA POBLACIÓN DIABÉTICA EN EL NIVEL PRIMARIO DE ATENCIÓN A LA SALUD

Este estudio tiene como objetivo analizar las características sociodemográficas, clínicas y los hábitos de vida de una población diabética atendida en el nivel primario de atención a la salud. Participaron 52 diabéticos registrados en un Centro de Investigación y Extensión Universitaria en el interior del Estado de San Paulo, en 2006. Los datos fueron recolectados mediante entrevista, utilizando-se dos formularios, después del consentimiento de los sujetos. Los resultados mostraron que los sujetos presentaban otras enfermedades asociadas a la diabetes y controle metabólico insatisfactorio. Esos datos pueden subsidiar las acciones de los profesionales de salud para la efectiva prevención y el manejo de la diabetes en los servicios de atención básica de salud. Ante los resultados conseguidos, se concluye que es necesario incrementar cursos de calificación en educación en la diabetes para los profesionales de salud, con el objetivo de atender a la complejidad del cuidado y a la progresión de la enfermedad en esta población.

DESCRIPTORES: diabetes mellitus; educación en salud; enfermedad crónica

CARACTERÍSTICAS SOCIODEMOGRÁFICAS E CLÍNICAS DE PORTADORES DE DIABETES EM UM SERVIÇO DE ATENÇÃO BÁSICA À SAÚDE

Este estudo teve como objetivo analisar as características sociodemográficas, clínicas e hábitos de vida de uma população diabética em nível primário de atendimento à saúde. Participaram 52 diabéticos cadastrados em um Centro de Pesquisa e Extensão Universitária no interior do Estado de São Paulo, em 2006. Os dados foram obtidos mediante entrevista, utilizando-se dois formulários, após o consentimento dos sujeitos. Os resultados mostraram que os sujeitos apresentaram co-morbidades e controle metabólico insatisfatório. Esses dados podem subsidiar as ações dos profissionais de saúde para a efetiva prevenção e manejo do diabetes nos serviços de atenção básica de saúde. Frente aos resultados obtidos, concluiu-se ser necessário incrementar cursos de capacitação em educação em diabetes para os profissionais de saúde, com o objetivo de atender à complexidade do cuidado e à progressão da doença nessa clientela.

DESCRITORES: diabetes mellitus; educação em saúde; doença crônica

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INTRODUCTION

*C*hronic health conditions are problems that require health system management, can appear abruptly or insidiously and, by definition, persist for an indefinite time. Moreover, they are permanent problems caused by irreversible pathological conditions, and cause residual impairments that require patient self-management training and a long period of supervision, observation and care[1].

Currently, there has been a significant increase in these conditions, and no country is immune to the impact they cause. Issues include economic and social consequences, demanding health resources in every country and representing a challenge for governments regarding the construction of health systems that are effective, efficient and organized, thus meeting the eminent demands[1].

Non- transmissible chronic diseases (NTCD) are the main cause of morbidity in industrialized countries, with a rapidly growing incidence in developing countries due to demographic transition and changes in the population's lifestyle. These diseases consume the country's health resources. Moreover, they are associated with poverty, which makes health care difficult, since other problems have to be dealt with, which are associated with infectious diseases, malnutrition, as well as maternal and perinatal problems[1]. This category includes diabetes mellitus, cardiovascular diseases, depression, schizophrenia, the human immunodeficiency virus/ acquired immunodeficiency syndrome (HIV/AIDS) and permanent physical deficiencies[1].

Several authors have stated that NTCDs, including diabetes mellitus, result from the interaction of genetic and environmental factors, among which lifestyle has a fundamental role[2]. The most frequently investigated lifestyle aspects that comprise risk factors for diabetes mellitus concern unhealthy food habits over a long period of time, smoking, sedentariness, obesity and alcohol abuse[3-4]. Changes in these risk factors could prevent or delay the onset of diabetes or, yet, could change its natural history, improving diabetic patients' quality of life and reducing diabetes costs to the health system of various countries.

Particularly, preventing diabetes and its complications are global public health priorities. In this sense, prevention should be performed at the different health care levels, by identifying individuals at risk (primary prevention), identifying non-diagnosed cases (secondary prevention), and treating affected individuals, with a view to preventing acute and chronic complications (tertiary prevention)[5].

Prevention at different health care levels of a population implies knowing the sociodemographic and clinical characteristics, among others, as one of the key elements to support the implementation of health care protocols, educational programs and result interpretation. Hence, the present research is proposed to emphasize the importance of recognizing a population's health issues and their determinants so as to redirect services and distribute the necessary resources.

OBJECTIVE

To analyze the sociodemographic and clinical characteristics, as well as the life habits of a diabetic population at the primary health care level.

MATERIAL AND METHOD

This is a descriptive study, performed at a Center for Research and Continuing Education in the state of Sao Paulo, in 2006. Participants were 52 users enrolled in a diabetes education program. Data were obtained through interviews, using two forms: one referring to patient enrollment, and another during nursing assessment, performed by the study researchers at the study site, after receiving the participants' consent. A database was created using SPSS 11.5 software for data organization and analysis, which calculated means and standard deviations of variables associated with age, time of diagnosis, body mass index (BMI), glycosylated hemoglobin (HbA1c), total cholesterol, LDL and HDL cholesterols, triglycerides, and systolic and diastolic blood pressure. Data were represented by means of absolute and relative frequency distribution.

RESULTS

Sociodemographic characteristics

The 54 participants were adults and elderly, 51.9% of whom were between 45-64 years old, and

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35.1% 65 years or more. Mean and standard deviation were 58.9 ±10.8 years. Most participants were women (74.1%) and married (68.5%). Regarding occupation, 42.8% were retired. As to education, it was observed that 59.3% did not finish primary education. With regard to family income, 29.6% referred receiving between one and two minimum salaries (Table 1).

Table 1 - Distribution of participants' (n=52) sociodemographic and clinical characteristics. Ribeirao Preto. 2006

Sociodemographic characteristics	(%)	Mean (sd*)
Age (years)		58±10.8
Gender (female/ male)	74.1/25.9	
Marital status (married)	68.5	
Occupation (retired)	42.8	
Education Level (incomplete primary level)	59.3	
Family income (between one and two minimum salaries)	29.6	
Clinical Characteristics		
Type of diabetes		
Diabetes type 1	3.7	
Diabetes type 2	96.3	
Time of diagnosis (years)		9.4±8.2
Co-morbidities		
High blood pressure	61.1	
Obesity	64.8	
Dyslipidemia	55.8	

*sd=standard deviation

Clinical characteristics

Regarding the type of diabetes, 96.3% were type 2 diabetic patients. The mean and standard deviation for time of diagnosis was 9.4±8.2 years, with a minimum time of one year and maximum of 39 years.

Regarding co-morbidities, it was found that 61.1% had high blood pressure, 64.8% were obese, and 55.8% had dyslipidemia, as shown in Table 1.

Concerning family antecedents of the disease, most participants reported diabetes (79.6%) and high blood pressure (72.2%). Obesity, dyslipidemia and hyperuricemia were less reported.

The most frequent signs and symptoms reported in the nursing assessment were lower limb pain (63.0%); visual confusion (53.7%); paresthesia (46.3%); asthenia (38.9%), cramps (37.0%); hearing impairments (35.2%); polydipsia and polyphagia (29.6%); and polyuria (27.8%).

Regarding medication therapy, it was found that 65.1% of users took oral hypoglycemic agents as monotherapy; 31.5% took insulin as monotherapy; and 16.6% took a combination of oral hypoglycemic

agents and insulin. It was also found that 61.1% of the participants were hypertensive and that 57.4% took medications.

In terms of their BMI, 40.7% of the users were class I obese, 22.2% were overweight and 16.7% were class II obese. Regarding laboratory test values, 40.7% of users had glycosylated hemoglobin (HbA1c) values above 7%; with mean and standard deviation of 6.9±1.9 (Table 2).

Of the 52 participants, 31.5% had total cholesterol levels above 200 mg/dl, with mean and standard deviation of 186.9±35.6 mg/dl. Regarding LDL cholesterol, 53.7% had values above 100 mg/dl, with mean and standard deviation of 110.3±30.9 mg/dl. It is highlighted that 14.8% had HDL cholesterol levels under 40 mg/dl, with mean and standard deviation of 53.0±12.7 mg/dl, 18.5% of whom presented triglycerides values above 150 mg/dl, with mean and standard deviation of 122.6±30.9 mg/dl (Table 2).

Regarding blood pressure values, it was found that 44.4% presented systolic blood pressure parameters above 130 mm/Hg, with mean and standard deviation of 131.2±16.4, and 33.3% had diastolic blood pressure values above 80 mm/Hg, with mean and standard deviation of 79.1±9.9 (Table 2).

Table 2 - Mean and standard deviation for patients' laboratory test values (n=52). Ribeirao Preto. 2006

Laboratory tests	Mean (sd*)
Glycosylated hemoglobin (HbA1c) (%)	6.9±1.9
Total cholesterol (mg/dl)	186.9±35.6
HDL cholesterol (mg/dl)	53.0±12.7
LDL cholesterol (mg/dl)	110.3±30.9
Triglycerides (mg/dl)	122.6±30.9
Systolic blood pressure (mm/Hg)	131.2±16.4
Diastolic blood pressure (mm/Hg)	79.1±9.9

*sd= standard deviation

Life habits

Regarding life habits, it was found that 57.4% of users performed some kind of physical activity; 61.1% reported following the food plan; 35.2% were ex-smokers; and 50% consumed alcoholic beverages, most (88.8%) of whom were social drinkers.

DISCUSSION

The study population consisted of adult and elderly diabetic patients. International studies have

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shown a 7% prevalence of type 2 diabetes among people between 45 and 64 years old. Moreover, it has also been reported that this percentage increases significantly among individuals aged 65 or older; in fact, at least 20% of the population over 65 has diabetes[6].

In Brazil, a multicentric study about diabetes prevalence found that diabetes frequency increases gradually after the age of 50. The study also emphasized the importance of diabetes as a health problem, associating it with the current progressive tendency of population aging in Brazil[7].

Diabetes also represents a serious problem for adults under 65; because of poor metabolic control, they have to deal with the resulting comorbidities for many years, which affects their quality of life.

In this sense, it is recommended that adult and elderly patients receive specific multidisciplinary interventions that include educational actions, with a view to improving knowledge about their disease and, consequently, their glycemic, lipid and blood pressure control[6,8].

Regarding gender, most participants in this study were women (Table 1). National and regional studies about diabetes in Brazil have shown there are no significant gender differences[7,9].

In terms of marital status, it was observed that most participants are married (Table 1). Psychosocial variables affect glucose fluctuations, since patients realize their disease as a factor that interferes in family dynamics. An unfavorable family environment can interfere in patient compliance with treatment. It should be emphasized that organized and structured families provide a more appropriate environment to support diabetic patient health care, strongly influencing their behavior towards the disease and making them collaborate to obtain good metabolic control[10].

It should be emphasized that 18.5% of the investigated patients are widowed. This factor could affect diabetes management, since, in some cases, losing one's spouse causes health changes, such as depression, dismay and loss of the will to live.

Regarding occupation, most participants were retired. These data agree with the subjects' age. On the other hand, 24.1% still work. Considering education, most patients have incomplete primary education, which agrees with the prevalence study in Brazil and Ribeirao Preto - Sao Paulo state[7,9]. It should be emphasized that none of the surveyed

studies showed an association between education and diabetes mellitus.

It was observed that most subjects have type 2 diabetes. It called our attention that, although all patients knew their diagnosis, 31.5% were not able to report which type of diabetes they had. Patients' knowledge about their type of diabetes is essential for disease self-management, medication use, physical activity increment, food plan compliance, feet care and others.

Regarding time of diagnosis, studies have shown that, in most cases, diagnosis for type 2 diabetes is late. In addition, there is a sub-diagnosis for this disease, since the patient usually presents some kind of complication when diagnosed[6-7,9].

There is evidence that the first appearance of retinopathy occurs at seven years after diabetes diagnosis, due to the sub-diagnosis of this disease. In addition, this sub-diagnosis is associated with increased risk for coronary diseases, acute myocardial infarction and peripheral vascular diseases[11].

Regarding the comorbidities found, in agreement with several studies, dyslipidemia, hypertension, obesity, as well as cardiovascular and peripheral vascular diseases are referred to as the most common diabetes-associated comorbidities. These comorbidities are aggravated because the diagnosis of type 2 diabetes usually takes long to be confirmed[6,11].

It is observed that the data concerning family antecedents are in agreement with literature, which appoints hereditariness and comorbidities as risk factors for the onset of diabetes[5-6].

The use of oral hypoglycemic agents by the elderly implies using specific strategies to educate these users, with a view to preventing hypoglycemia episodes as well as making the appropriate interventions[5].

When the type of oral hypoglycemic agent used was Biguanides, users often reported they stopped taking the pills because of their size, which they considered "too large", as well as due to the resulting gastrointestinal discomfort. Detecting this problem is essential to adopt individual intervention strategies, with support from the multiprofessional team, as well as group interventions, based on the report of other patients' experiences, with a view to achieving medication treatment compliance.

Users also reported using insulin to treat diabetes. Insulin is only indicated after a rigorous

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assessment of the patient's conditions, due to the risk of hypoglycemia and weight gain[5-6].

On the other hand, a study has shown that intensive insulin treatment improves glycemic control, reducing hemoglobin A1c and, consequently, long-term microvascular complications, and the risk of cardiovascular diseases, despite hypoglycemia episodes[12].

Despite the benefits of insulin therapy for diabetic users, the population's taboos and beliefs should be taken into consideration before introducing the treatment. It should also be considered that indicating several insulin shots often limits the patient's daily activities and implies difficulties associated with transporting insulin and being recognized as a person with diabetes[13].

On the other hand, it was worrying that several hypertensive patients did not use the medication. Medication coverage for this disease is important because arterial hypertension is one of the most common comorbidities among diabetic patients. Moreover, it is a significant risk factor for developing cardiovascular diseases and microvascular complications, such as retinopathy and nephropathy. Arterial hypertension treatment includes, in addition to antihypertensive drugs, changes in lifestyle and food habits. Studies have demonstrated the effects of complying with the food plan, reducing sodium in the diabetic patient's diet and performing physical activities on blood pressure[6].

Most patients in this study were overweight or at some level of obesity. Literature shows that 60% of type 2 diabetic patients are obese at the moment of diagnosis, and most remain obese for long periods of time[3,13].

Weight loss is one of the most important therapeutic goals for patients with type 2 diabetes, since there is a direct relation between overweight and insulin resistance. On the other hand, continuous weight loss for a long period of time is a difficult task for most diabetic users[3,6,13].

Recommendations concerning weight loss for diabetic patients in intensive and structured follow-up programs include education and counseling about following the food plan and doing physical activities. Maintaining the attachment between the multiprofessional team and the patient is also an important aspect for losing and maintaining weight for long periods. It should be recalled that the genetic factor, in some cases, makes the goals more difficult to reach[3,6].

Regarding A1c hemoglobin values, it is observed that 40.7% of patients presented values above 7%, with a mean and standard deviation of 6.9±1.9. Considering that hemoglobin A1c is capable of previewing the risk of developing several chronic diabetes complications, it is recommended that its verification in every patient with diabetes be done to document glucose control levels[14].

The expressed A1c hemoglobin values to assess glucose control level are based on prospective and randomized clinical studies. These studies have shown a correlation between glucose control and the risk of developing chronic diabetes complications, since patients with better glucose control also presented lower risks of developing micro and macrovascular complications[12].

Regarding lipid control, studies have shown a strong association between type 2 diabetes and dyslipidemia[6]. The treatment for dyslipidemia includes changes in lifestyle, such as following a diet low in cholesterol and saturated fats, which reduced LDL cholesterol concentration, and performing physical activities, which collaborates to reduce serial LDL cholesterol concentrations and increase HDL cholesterol[6].

As to blood pressure values, clinical randomized studies have demonstrated the benefits of a systolic blood pressure< 140 mmHg, and diastolic blood pressure < 80 mmHg in patients with diabetes, since there is a reduction in coronary diseases, cerebrovascular accidents and nephropathies[6].

The main goal of arterial hypertension treatment is to reduce cardiovascular risk by obtaining appropriate blood pressure levels, controlling risk factors and target-organ lesions, which appear in the long term[6].

Nowadays, it is recommended that health care to diabetes patients be delivered by a multiprofessional team[15]. This approach aims to help patients understand the importance of changing their lifestyle with a view to reaching good metabolic control. As to smoking, patients who are ex-smokers reported that their reason for quitting was some kind of cardiovascular event, which is an extremely concerning fact that shows gaps in health promotion activities.

CONCLUSIONS

Results show that the users in this study already present comorbidities and unsatisfactory

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metabolic control. Thus, more thought should be given to the importance of multiprofessional team education in diabetic patient care, with a view to: intensifying the strategies to obtain good metabolic control; establishing a permanent means of communication between institutional health professionals and users, especially in the initial/adjustment phase of the diabetes treatment; reviewing the criteria established by health institutions regarding return visits, especially in the initial/adjustment phase of the diabetes treatment; involving the family and/or significant relatives in the education program, turning them into a collaborator in diabetic user care; and, finally, developing intervention research with diabetic users that encourage changes in habits and lifestyles, and permitting to understand what factors interfere and/or facilitate the achievement of metabolic control. In view of the obtained results, it is concluded that increased training courses in diabetes education are needed for health care professionals, with the aim of facing the complexity of health care and the progression of the disease in these users.

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