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PERFIL CLÍNICO E SOCIODEMOGRÁFICO DE PACIENTES COM DEFICIÊNCIA VISUAL E DIABETES MELLITUS

CLINICAL AND SOCIODEMOGRAPHIC PROFILE OF PATIENTS WITH VISION DISORDERS AND DIABETES MELLITUS

PERFIL CLÍNICO Y SOCIODEMOGRÁFICO DE PACIENTES CON TRASTORNOS VISUALES Y DIABETES MELLITUS

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RESUMO

Objetivo: Descrever e analisar as características clínicas e sociodemográficas de pacientes deficientes visuais diabéticos. **Método:** Estudo transversal, descritivo, desenvolvido em um Centro de Reabilitação Visual com 51 pacientes deficientes visuais diabéticos que participaram de uma entrevista estruturada. Foi realizada análise descritiva das variáveis, testou-se a normalidade pelo teste de Kolmogorov Smirnov, e a análise bivariada entre a variável dependente e as variáveis independentes utilizando o teste estatístico Regressão de Poisson. As associações foram consideradas estatisticamente significativas quando p< 0,05. **Resultados:** A maioria dos participantes era do sexo masculino (58,8%), com 60 anos ou mais (43,1%), branco (49,0%) e sem companheiro (56,8%). Os portadores de diabetes tipo 2 (54,9%) foram diagnosticados, há mais de dez anos (56,9%), apresentavam sobrepeso (43,15%) e eram hipertensos (74,5%). A maior parte da população entrevistada era cega (72,5%) e relatou que as doenças oculares foram a causa da deficiência visual. Entre os diabéticos, 47% dos pacientes tipo 1 apresentavam retinopatia diabética. **Conclusão:** A caracterização clínica e sociodemográfica dos pacientes deficientes visuais norteiam o gerenciamento do cuidado e os programas de promoção e prevenção a serem desenvolvidos, uma vez que as estratégias de controle das doenças sofrem diferentes influências, dependendo das características da população acometida.

DESCRITORES: Características da população; Diabetes Mellitus; Adulto; Idoso; Transtornos da visão.

ABSTRACT

Objective: To describe and analyze the clinical and sociodemographic characteristics of diabetic and visually impaired patients. **Method:** A cross-sectional and descriptive study was developed in a visual rehabilitation center with 51 diabetic and visually impaired patients who participated in a structured interview. The descriptive analysis of the variables was performed and normality was tested by the Kolmogorov Smirnov test. Bivariate analysis between the dependent variable and the independent variables was performed using Poisson regression. The associations were considered statistically significant when $p < 0.05$. **Results:** Most participants were men (58.8%), aged 60 years old or older (43.1%), white (49.0%) and had no partner (56.8%). Patients with type-2 diabetes (54.9%) were diagnosed over 10 years ago (56.9%) and were overweight (43.15%) and hypertensive (74.5%). Most of the interviewed population was blind (72.5%) and reported that ocular diseases were the cause of visual impairment. Among the diabetic patients, 47% of type-1 patients had diabetic retinopathy. **Conclusion:** The clinical and sociodemographic characterization of visually impaired patients guide the management of care and the promotion and prevention programs to be developed, since the disease control strategies suffer different types of influence, depending on the characteristics of the affected population.

DESCRIPTORS: Population Characteristics; Diabetes Mellitus; Adult; Aged; Vision Disorders.

RESUMEN

Objetivos: Describir y analizar las características clínicas y sociodemográficas de pacientes con deficiencia visual y diabetes. **Método:** Estudio transversal, descriptivo, desarrollado en un centro de rehabilitación visual en 51 pacientes con trastornos visuales y diabetes que participaron en una entrevista padronizada. Se realizó un análisis descriptivo de las variables, se comprobó la normalidad aplicando test de Kolmogorov-Smirnov, y un análisis bivariado entre variables dependientes e independientes, utilizando la Regresión de Poisson. Las asociaciones fueron consideradas como estadísticamente significantes con p<0,05. **Resultados:** La mayoría de los participantes eran de sexo masculino (58,8%), de 60 años o mayores (43,1%), blancos (49,0%) y sin pareja (56,8%). Los afectados por diabetes tipo 2 (54,9%) tenían un diagnóstico mayor a 10 años (56,9%), mostraban sobrepeso (43,15%) y eran hipertensos (74,5%). La mayoría de los entrevistados eran ciegos (72,5%) e informaron que las enfermedades oculares provocaron su trastorno visual. Entre los diabéticos, el 47% de los pacientes tipo 1 presentó retinopatía diabética. **Conclusión:** La caracterización clínica y sociodemográfica de los pacientes con trastornos visuales sugiere el gerenciamiento del cuidado y de los programas de promoción y prevención a desarrollarse, considerando que las estrategias de control de las enfermedades reciben diferentes influencias, dependiendo de las características de la población que las padece.

Descriptores: Características de la Población; Diabetes Mellitus; Adulto; Anciano; Trastornos de la Visión.

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INTRODUCTION

Diabetes Mellitus (DM) is a complex, heterogeneous metabolic disorder characterized by increased concentration of glucose in the blood due to insulin action resistance, insufficient insulin secretion or both. The classification and diagnosis of DM are complex and have been the subject of much study, debate and review, which extend over many decades. DM can be classified into three main types: type 1, type 2 and gestational[1].

DM is associated with socioeconomic, demographic factors and other health conditions that are susceptible to intervention, emphasizing the need for more effective public policies aimed mainly at the modification of life habits[2]. Rapid urbanization, epidemiological transition, nutritional transition, sedentary lifestyle, overweight, population growth and aging are factors that contribute to the increased prevalence of DM[3].

According to estimates by the International Diabetes Federation (IDF), worldwide in 2017, DM affected 326.5 million working age people (20-64 years old) and 122.8 million people between 65 and 99 years old. In 2045, the number of working age people with DM is estimated to increase to 438.2 million, and people between 65 and 99 years old will increase to 253.4 million. In Brazil, in 2017, DM affected 12.5 million working age people, with a projection of 21.8 million in 2045[1].

With the current population aging in Brazil, DM will certainly have a greater contribution to mortality in the country, increasing more than 400 times the age group from 0 to 29 years old to 60 years old or more[3].

Approximately four million people worldwide, between 20 and 79, died due to DM in 2017, which amounts to one death every eight seconds. Considering the same age group, the economic impact for countries, health systems and, above all, for individuals with DM and their families, increased from $232 billion in 2007 to $727 billion in 2017 worldwide[1].

Considering the rapid aging of the Brazilian population, it is important to invest in promotion programs, aiming at early interventions, to prevent and control DM, such as: healthy eating, tobacco and alcohol consumption restriction and programs for physical activity. Thus it will contribute to the reduction of overweight and obesity and other risk factors common to Chronic Noncommunicable Diseases (NCDs), such as DM[4].

If they do not treat or control the disease, patients with DM may develop more complications[3] and are 30 times more likely to become blind than patients without the disease[5].

Visual impairment (VI) is characterized by total (blindness) or partial loss (low or subnormal vision) of vision, and may be congenital or acquired[6]. It is estimated that, in the world, more than 407 million people have some type of VI, and among them, 36 million people are blind, more than 216 million have moderate to severe VI and 188 million have mild visual impairment[7].

In Brazil, the last Demographic Census, conducted in 2010, showed that more than 45 million Brazilians have at least one disability (23.9% of the total population), and VI was the most frequent deficiency (18.6% of the Brazilian population), 3.46% of them with severe VI[8].

There is evidence of effective interventions aimed at improving DM control and reducing its modifiable risk factors, however there are significant gaps in the knowledge base on the theme. In view of the above and the scarcity of articles that describe and analyze the clinical and sociodemographic profile of patients with VI and DM, the aim of this study was to describe and analyze the clinical and sociodemographic characteristics of visually impaired diabetic patients.

METHOD

This is a cross-sectional, descriptive, quantitative study developed at the Visual Rehabilitation Center, located in the interior of the State of São Paulo. The institution serves people with VI, referenced by establishments linked to the *Sistema Único de Saúde* (SUS); assists patients from all phases of the life cycle and currently has 241 enrolled, 113 are adults and elderly and 62 patients have DM.

The study population consisted of 62 adult and elderly patients, with VI enrolled in the institution, diagnosed with DM. Patients who met the following criteria were considered eligible: they were 18 years old or older, accepted to participate in the research, signed the Free and Informed Consent Form (FIC) and attending the institution regularly. Eleven patients were excluded, five of which did not attend the institution regularly, five because they refused to

participate in the study and one patient who died, so the sample consisted of 51 patients.

Data were collected from June to August 2018. Initially, there was a meeting with the patients selected to show them the objective of the study and its stages. At this meeting, each participant received two ways of the FIC, provided for in Resolution No. 466/12 of the *Conselho Nacional de Saúde* (CNS). It was read through a portable and independent device that expands and reads in loud sound printed materials for individuals with VI; after acceptance, a copy of the signed term was returned immediately. Then, a structured interview was conducted individually and privately, with an average duration of 40 minutes. The interview followed an instrument of data collection, elaborated by the researcher, which included the variables: sociodemographic profile (gender, age, marital status, self-declared color, school level, paid activity and monthly income), clinical profile and lifestyle (type of DM, time of discovery of the disease, family history, types and adherence to treatment, dyslipidemias, exercise practice, smoking, alcohol use, systemic arterial hypertension (SAH), follow-up in Primary Health Care (PHC), access to educational activities to prevent DM, abdominal circumference, Body Mass Index (BMI) and aspects related to VI.

For weight measurement, we used an electronic portable scale, with a capacity of 200 kg and a division of 50 g. Patients were weighed with as little clothing as possible and feasible. To obtain height (cm), we used a portable stadiometer with an extension of two meters and division of 0.1 cm. The patients were in an upright position, barefoot and with the ankles against the statiometer[9].

To measure abdominal circumference, we used a measuring tape of 150 cm; the patient, in a supine position, deeply inspired and, at the end of expiration, the measurement was performed in the highest abdominal perimeter between the last rib and the iliac crest, according to WHO recommendations[9].

BMI was used to characterize patients on nutritional status and classified according to the Brazilian Obesity Guidelines (2016)[9]: low weight < 18.5 kg/m²; eutrophic between 18.5 and 24.9 kg/m²; overweight between 25 and 29.9 kg/m²; obesity I between 30 and 34.9 kg/m²; obesity II between 35 and 39.9 kg/m²; obesity III > 40 kg/m². The cutoff points of the abdominal circumference measurement adopted for increased cardiovascular risk were: equal to or greater than 90 cm, in men and 80 cm, in women[9].

For data analysis, we used the Software SPSS Statistics, version 23, linked to the functionalities of the Excel ® tool, version 2016. Initially, a descriptive analysis of the variables was performed, the quantitative ones being described in means and standard deviations; and qualitative frequencies, in simple frequencies and percentages. Normality was tested by the Kolmogorov Smirnov test. Bivariate analysis was performed between the dependent variable: “type of DM” and the independent variables: “BMI”, “abdominal circumference”, “type of VI", “VI time”, “cause/disease that led to VI”, “glaucoma”, “cataract” and “Diabetic Retinopathy – RD”, employing the statistical test Poisson Regression, that was applied to analyze the dependence of dichotomous variables, when crossed with dichotomous (2x2) or continuous variables. The tests included alpha error of 5% and reliability of 95%, thus, the associations were considered statistically significant when $p< 0.05$.

This study was submitted to the *Comitê de Ética e Pesquisa* (CEP) of the Faculty of Medicine of São José do Rio Preto, São Paulo, under Protocol CAAE 85890918.2.0000.5415 and approved on April 12, 2018, with opinion no. 2,595,328, meeting the legal requirements for study involving human beings.

RESULTS AND DISCUSSION

Of the 51 participating patients, the majority were male, aged 60 years old or more, with an average age of 54 years old and standard deviation of 16.3 years, without spouse/partner, self-reported white color, with incomplete high school, without paid activity and monthly income of one to three minimum wages (Table 1).

The results were similar to those found in another study regarding gender, school level and not having a spouse[10]. However, other studies found predominance of female and married participants[11-12].

Table 1 - Distribution of diabetic visually impaired patients, according to sociodemographic characteristics. São José do Rio Preto, SP, Brazil, 2018. (n=51).

Variables	N	%
Gender		
Male	30	58.8
Female	21	41.2
Age		
18 to 29 years old	6	11.8
30 to 39 years old	3	5.9
40 to 49 years old	10	19.6
50 to 59 years old	10	19.6
60 years old or more	22	43.1
Marital status		
Single	12	23.5
Married	21	41.2
Concubine	1	2.0
Separated/Divorced	13	25.5
Widow/er	4	7.8
Color (self-declared):		
White	25	49.0
Pardo	21	41.2
Black	5	9.8
School level:		
No school/ Iliterate	1	2.0
Incomplete Elementary School	24	47.1
omplete Elementary School	4	7.8
Incomplete High School	2	3.9
Complete High School	13	25.5
Incomplete Higher Education	1	2.0
Complete Higher Education	6	11.8
Exercise paid activity:		
No	49	96.1
Yes	2	3.9
Monthly Income (in minimum wages*):		
<1	1	2.0
1 to 3	31	60.8
4 to 5	12	23.5
>5	7	13.7

Source: Elaborated by the authors.

* Minimum Wage, Brazil, 2018: R$ 954.00.

The culture of invulnerability and the stereotype of man create resistance to self-care practices; men consider that using the health service demonstrates weakness and insecurity, so they seek health services only in emergency situations[13]. Considering that one of the primary measures to prevent complications of DM is self-care and man resists to this practice, it can justify the higher prevalence of males.

Ethnicity is considered a risk factor not modifiable to type 2 DM[1], however, in the last *Pesquisa Nacional de Saúde* (PNS), conducted in 2013 by the *Instituto Brasileiro de Geografia e Estatística* (IBGE), in partnership with the Ministry of Health, were not differences with statistical significance in the prevalence of DM with skin color[14].

It is possible to observe a convergence with the results achieved by other studies, in which 53.5% and 43.0% of patients were 60 years old or more[15-16]. The age group from 60 to 69 years old,

low school level and living alone are factors for poor knowledge about DM.

It is also worth mentioning that, in the past, it was difficult to in access education, which may justify the low education of the elderly and their frequent attendance to public health services. Thus, it is essential that health professionals ensure the quality and clarity in the guidelines offered on the disease and the treatment to this population[17].

In Brazil, the Benefit of Continued Provision (BCP) is guaranteed by law and provides a monthly minimum wage for the elderly (over 65 years old) and to the disabled who prove that they do not have financial means to live, or are kept by their family. This benefit has changed since its institution, however the income limit remains the same, that is, per capita monthly family income cannot exceed a quarter of the minimum wage[18]. Whereas, most of the time, the labor market offers people with disabilities an income equal to or less than they receive with the benefit, many prefer not to work and assure an income than facing discrimination and expose themselves to the uncertain and hostile work environment[19]. This information may justify and meet the results of the current study.

Os dados da Tabela 2 confirmam os dados da literatura, uma vez que a DM tipo 2, apesar de poder ser evitado, é o mais prevalente[1].

Data from Table 2 confirm the literature data, since type 2 DM, although it can be avoided, is the most prevalent[1].

Table 2 - Distribution of patients, according to clinical characteristics and lifestyle. São José do Rio Preto, SP, Brazil, 2018. (n=51).

Variables	n	%
DM type:		
Type 1	23	45.1
Type 2	28	54.9
DM discovery time (in years):		
1 to 3	7	13.7
4 to 5	3	5.9
6 to 10	12	23.5
> 10	29	56.9
Family History (parents and/or siblings):		
No	20	39.2
Yes	31	60.8
Types of treatment:		
Diet	1	2.0
Oral hypoglycemic	12	23.5
Insulin	4	7.8
Diet and oral hypoglycemic	16	31.4
Diet and insulin	14	27.5
Oral hypoglycemic and insulin	1	2.0
Diet, oral hypoglycemic and insulin	3	5.9
Stopped following treatment at some point:		
No	31	60.8
Yes	20	39.2
Dyslipidemia:		
No	27	52.9
Yes	24	47.1
Practiced physical exercises regularly:		
No	40	78.4
Yes	11	21.6
Smoker:		
No	48	94.1
Yes	3	5.9
Alcohol intake:		
No	42	82.4
Yes	9	17.6

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Variables	n	%
Systemic Arterial Hypertension:		
No	13	25.5
Yes	38	74.5
Followed-up at primary health care:		
No	11	21.6
Yes	40	78.4
They have/had access to educational activities to prevent DM and its complications:		
No	39	76.5
Yes	12	23.5

Source: Elaborated by the authors.

The results also corroborate the data from another study, in which type 2 DM was present in 82.4% of patients[15]. The time of DM diagnosis is a variable of great influence on quality of life, and, an extended period of about ten years, increases the risk of complications[20]. A study conducted in the state of Goiás identified, in its sample, that 51.4% of the patients were diagnosed with DM more than ten years ago[15]. In another study, conducted in Minas Gerais, data showed that the presence of complications related to DM was associated with the duration of the disease, since those that had the disease more than ten years had a higher percentage of complications than those that had the disease for less time[16]. The results of this study also indicate this reality, since most patients (56.9%) discovered the disease more than ten years ago (Table 2).

A study conducted in southern Brazil that analyzed the epidemiological profile and evaluated the quality of life of people with DM, identified data from family history, but in lower percentages. The highest prevalence of risk factors was sedentary lifestyle (64.0%), dyslipidemia (65.7%) and overweight/obesity (50.9%); the lowest prevalence was the smoking risk factor (20.3%). This research also identified that all patients underwent some type of treatment[12]. Although these results corroborate the findings of this study we observed that, when all patients reported doing some type of treatment and most have never abandoned it, dyslipidemia, overweight and sedentary lifestyle were highlighted in the sample studied (Tables 2 and 3).

About one quarter of the patients had associated SAH, data similar to other studies[12,21], in which the frequency of SAH was also significant (71.7% and 89.1%) among the participants.

Regarding alcoholic intake, the result of this study was higher (17.6% of the participants), when compared to the study conducted with data from the national *Pesquisa Dimensões Sociais das Desigualdades*, which identified that 5.4% of diabetic patients drink alcohol[2].

Health education activities aimed at controlling DM should be considered part of the comprehensive treatment, taking into account the difficulty diabetic patients have to follow the prescribed drug and non-drug based treatment. These activities will increase understanding about the disease, help increase autonomy and overcome the various obstacles that hinder the control of the disease, thus contributing to prevent associated complications and maintain life quality of people with DM[22]. A study whose objective was to evaluate knowledge, attitude and factors associated of patients with DM at PHC, identified that 61.5% of patients do not participate in an education group in DM[21]. In this study, although most participants reported receiving assistance at PHC, only 23.5% stated they have or had access to educational activities to prevent DM and their complications (Table 2). This is an aggravating factor, in view of the need and importance of preventing such disease and its complications.

Table 3 highlights the results of patients' BMI, in which we see that some were overweight and had abdominal circumference above the recommended.

We also verified that the type of DM is not a factor that significantly influences BMI results and abdominal circumference, since "p" values were higher in the significance level adopted (Table 3). Studies have emphasized that eating patterns associated with sedentary lifestyle may be responsible for the increased incidence and prevalence of obesity and diabetes[22].

Table 3 - Bivariate analysis, related to nutritional status and type of DM, in visually impaired patients. São José do Rio Preto, SP, Brazil, 2018. (n=51).

Variables	DM Type 1		DM Type 2		Total		p
	n	%	n	%	n	%	
BMI							
Low Weight	1	4,35	0	0,00	1	1,96	
Eutrophic	3	13,04	9	32,14	12	23,53	
Overweight	10	43,48	12	42,86	22	43,14	0,094*
Obesidade I	8	34,78	5	17,86	13	25,49	
Obesity II	0	0,00	2	7,14	2	3,92	
Obesity III	1	4,35	0	0,00	1	1,96	
Abdominal Circumference							
<= 90 = Male /Normal	3	13,04	6	21,43	9	17,65	
>= 91 = Male /Altered	9	39,13	12	42,86	21	41,18	0,245*
<= 80 = Female /Normal	0	0,00	1	3,57	1	1,96	
>= 81 = Female /Altered	11	47,83	9	32,14	20	39,22	

Source: Elaborated by the authors.

* Poisson Regression test applied to p<0.05.

Most diabetic patients were blind and reported that ocular diseases (diabetic retinopathy (DR), glaucoma and cataract were the cause of VI, however such evidence was not confirmed in a statistically significant way (Table 4).

Analyzing the sample by type of DM, we observe that most type 1 diabetic patients became visually impaired less than six years before and type 2 patients became visually impaired more than six years before, with a statistically significant association between type of diabetes and VI time (Table 4).

Table 4 - Distribution of type, time and cause of VI, according to the type of DM reported by visually impaired patients. São José do Rio Preto, SP, Brazil, 2018. (n=51).

Variables	DM Type 1		DM Type 2		TOTAL		p
	n	%	n	%	n	%	
Type of VI:							
Low Vision	6	26.09	8	28.57	14	27.45	0.841*
Blind	17	73.91	20	71.43	37	72.55	
Time of VI (in years):							
< 2	9	39.13	5	17.86	14	27.45	0.001*
3 to 5	3	13.04	5	17.86	8	15.69	
6 to 8	4	17.39	1	3.57	5	9.80	
9 to 11	2	8.70	3	10.71	5	9.80	
> 12	5	21.74	14	50.00	19	37.25	
Cause/disease that led to VI:							
Eye Diseases (DR, glaucoma and cataract)	19	82.61	13	46.43	32	62.75	0.389*
Others	4	17.39	15	53.57	19	37.25	

Source: Elaborated by the authors.

* Poisson Regression test applied to p<0,05.

A study conducted in a hospital environment in Ghana, identified that 18.4% of diabetic patients who attended the institution, had some type of VI, and 5.8% were blind[23]. In Hungary, it was observed that 13.8% of diabetic patients of 50 years old or more had some type of VI and 0.9% were blind[24]. A research conducted in Mexico showed that 14.9% of diabetic patients over 50 years old, had some type of DV and 1.5% were blind[25]. In Brazil, we did not find recent studies involving this theme and, in this study, all patients were diabetic VI, most of whom were blind. This fact is justified since the place of the research is a specialized service for the rehabilitation of visually impaired people.

Table 5 shows a statistically significant association between the type of DM and the presence of DR (p= 0.008). The majority (78.26%) of type 1 diabetic patients had the disease. However, despite there is not a statistically significant association (p= 0.561), it is noteworthy that glaucoma was not reported by 52.9% of patients and did not prevail in any type of DM. although cataract also did not have statistically significant association (p= 0.760), it prevailed in 58.8% of the sample studied, with a predominance in both types of DM.

This study showed a statistically significant association between the type of DM and the presence of DR and most type 1 diabetic patients had DR (Table 5). DR is the main cause of vision loss in working age adults, reaching more than one third of all patients with DM[1]. According to the guidelines of the *Sociedade Brasileira de Diabetes* (SBD), in the world, it is estimated that 93 million diabetic patients have some degree of DR and, in Brazil, approximately four million people have the disease[3]. In the study conducted in Hungary, DR was responsible for 28% blindness and 50% severe VI among participants with DM of 50 years old or more[24].

Table 5 - Distribution of eye diseases according to the type of DM. São José do Rio Preto, SP, Brazil, 2018. (n=51).

Variables	DM Type 1		DM Type 2		Total		p
	n	%	n	%	n	%	
Glaucoma							
No	12	52.17	15	53.57	27	52.94	0.561*
Yes	11	47.83	13	46.43	24	47.06	
Cataract							
No	8	34.78	13	46.43	21	41.18	0.760*
Yes	15	65.22	15	53.57	30	58.82	
DR							
No	5	21.74	22	78.57	27	52.94	0.008*
Yes	18	78.26	6	21.43	24	47.06	

Source: Elaborated by the authors.

* Poisson Regression test applied to p<0.05.

In addition to DR, cataract and glaucoma are also frequent and early pathologies in individuals with DM[3]. In Brazil, in 2015, there were 350,000 people blinded by cataracts, with a 20% increase in the prevalence of new cases each year. Glaucoma is considered the second leading cause of blindness in the world, the estimated incidence is from 1 to 2% of the population, in general, and this percentage increases after 40 years old[5]. In this study, there was no statistically significant association between cataracts, glaucoma and types of DM. Glaucoma was not reported by most patients and there was no predominance in any type of DM. Cataract prevailed in the sample studied (Table 5).

Considering that the place of data collection serves 104 municipalities and does not perform the clinical treatment of DM, access to data from patients' medical records was not possible and feasible. Thus, we could not corroborate the information reported in the interview, such as evolution of the disease and its complications, which is a limitation of this study.

CONCLUSION

The results showed that diabetic visually impaired patients are mostly male, of 60 years

old or more, without a partner, white, did not complete high school and, although they do not exercise paid activity, have a monthly income of one to three minimum wages.

There was a predominance of type 2 DM, with a diagnosis for more than ten years, and family history. Although everyone reported doing some kind of treatment and most never stopped it, almost half had dyslipidemia; overweight and sedentary lifestyle were highly prevalent. Few have reported that they have or had access to educational activities to prevent DM and their complications.

Most patients are blind, reported that eye diseases (DR, glaucoma and cataract) were the cause of VI. Type 1 diabetic patients became visually impaired less than six years before and type 2 became visually impaired more than six years before. The study also revealed a statistically significant association between the type of DM and the presence of DR.

Thus, the results suggest new studies with the objective of taking into account other dimensions of care, especially in PHC to obtain comparisons, through primary and secondary data sources, identifying findings and associations for more effective strategies involving DM and DV.

Therefore, the results of this study, the high prevalence and scarcity of articles in Brazil and in the world that address DM and visually impaired patients highlight the need for greater vigilance of managers and health professionals on the theme. Clinical and sociodemographic characterization of visually impaired patients guide care management and educational programs to be developed by health professionals, since disease control strategies suffer different influences, depending on the characteristics of the affected population.

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