

PREVALENCE AND PROFILE OF PEOPLE WITH DIABETES REGISTERED AT THE PRIMARY CARE INFORMATION SYSTEM (SIAB)

Prevalência e perfil das pessoas com Diabetes cadastradas no Sistema de Informação da Atenção Básica (SIAB)

Prevalencia y perfil de personas con Diabetes registradas en el Sistema de Información de la Atención Básica (SIAB)

Original Article

ABSTRACT

Objective: To assess the prevalence and profile of people with self-reported diabetes mellitus (DM). **Methods:** A retrospective cross-sectional study conducted with secondary data extracted from the *Sistema de Informação da Atenção Básica - SIAB* (Primary Care Information System). Data were obtained from the Municipal Health Secretariat during March and April 2014. SIAB data collected referred to the population with self-reported diabetes (15 years and older) of the municipality of Lajeado, RS, for the period between 2011 and 2013 and underwent descriptive statistical analysis using the SPSS 21.0 software. **Results:** We found that the prevalence of people with DM remained the same throughout the years studied (3.0% in 2011, 3.1% in 2012, and 3.0% in 2013). This population was mostly aged over 60 (60% in 2011, 58% in 2012, and 60% in 2013), literate (88% in 2011, 89.9% in 2012, and 90.7% in 2013), and predominantly female (63.2% in 2011, 62.9% in 2012, and 63.7% in 2013) and hypertensive (77.5% in 2011, 76.1% in 2012, and 76.9% in 2013). The prevalence of pregnant women with diabetes was of 0.5% in 2012 and of 0.3% in 2013, with no cases in 2011. **Conclusion:** The prevalence of self-reported DM in the municipality is around 3% for the years analyzed, which is below the national average. It was found that the majority of the population with DM is elderly, female, literate and hypertensive, and there is a low prevalence of DM among pregnant women.

Descriptors: Diabetes Mellitus; Prevalence; Public Health; Health Management.

RESUMO

Objetivo: Avaliar a prevalência e o perfil das pessoas com diabetes mellitus (DM), autorreferidas. **Métodos:** Estudo transversal, retrospectivo, realizado com os dados secundários extraídos do Sistema de Informação da Atenção Básica (SIAB). Os dados foram obtidos junto à Secretaria Municipal de Saúde nos meses de março a abril de 2014. Coletaram-se os dados do SIAB referentes à população com diabetes autorreferidas (com 15 anos ou mais) do município de Lajeado-RS, no período de 2011 a 2013, analisados através de estatística descritiva, utilizando-se o programa SPSS versão 21. **Resultados:** Verificou-se que a prevalência das pessoas com DM se manteve equiparada nos anos estudados (3,0% em 2011, 3,1% em 2012 e 3,0% em 2013). Essa população, na sua maioria, estava acima de 60 anos (60% em 2011, 58% em 2012 e 60% em 2013), é alfabetizada (88% em 2011, 89,9% em 2012 e 90,7% em 2013), com predominância do sexo feminino (63,2% em 2011, 62,9% em 2012 e 63,7% em 2013) e hipertensa (77,5% em 2011, 76,1% em 2012 e 76,9% em 2013). A prevalência de gestantes com diabetes foi de 0,5% em 2012 e 0,3% em 2013, não havendo casos em 2011. **Conclusão:** A prevalência de DM autorreferida no município é em torno de 3% nos anos analisados, abaixo da média nacional. Constatou-se que a maioria da população com DM é idosa, feminina, alfabetizada, hipertensa, além de haver baixa prevalência de DM em gestantes.

Descritores: Diabetes Mellitus; Prevalência; Saúde Pública; Gestão em Saúde.

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RESUMEN

Objetivo: *Evaluar la prevalencia y el perfil de las personas con Diabetes Mellitus (DM) autorreferidas. Métodos:* Estudio transversal y retrospectivo realizado con datos secundarios del Sistema de Información de la Atención Básica (SIAB). Los datos fueron obtenidos en la Secretaría Municipal de la Salud entre los meses de marzo y abril de 2014. Se recogieron datos del SIAB concerniente a la población con diabetes autorreferida (de 15 años o más) del municipio de Lajeado-RS en el periodo entre 2011 y 2013 analizados a través de la estadística descriptiva y la utilización del programa SPSS versión 21. **Resultados:** Se verificó que la prevalencia de las personas con DM se mantuvo parecidas en los años investigados (el 3,0% en 2011, el 3,1% en 2012 y el 3,0% en 2013). Esta población, en su mayoría, tenía más de 60 años (el 60% en 2011, el 58% en 2012 y el 60% en 2013), está alfabetizada (el 88% en 2011, el 89,9% en 2012 y el 90,7% en 2013), con predominancia del sexo femenino (el 63,2% en 2011, el 62,9% en 2012 y el 63,7% en 2013) e hipertensa (el 77,5% en 2011, el 76,1% en 2012 y el 76,9% en 2013). La prevalencia de embarazadas con diabetes fue del 0,5% en 2012 y del 0,3% en 2013, sin casos en 2011. **Conclusión:** La prevalencia de la DM autorreferida en el municipio es del 3% en los años investigados lo que está por debajo de la media nacional. Se constató que la mayoría de la población con DM es mayor, mujer, alfabetizada, hipertensa, además de tener baja prevalencia de DM en las embarazadas.

Descriptor: *Diabetes Mellitus; Prevalencia; Salud Pública; Gestión en Salud.*

INTRODUCTION

The prevalence of diabetes mellitus (DM) grows progressively, making this endocrine disorder a public health problem of epidemic proportions⁽¹⁾. Recent data from the International Diabetes Federation (IDF) shows that, in 2013, diabetes caused 5.1 million deaths and costed more than 548 billion dollars to the health services⁽²⁾.

The predominant age range is from 40 to 59 years and, despite reaching all social classes, 80% of people with diabetes live in underdeveloped or developing countries. Brazil ranks fourth in the ranking of countries with the highest number of people with diabetes between 20 and 79 years, having 11.9 million people with the disease⁽²⁾. This disease affects 5.6% of the Brazilian adult population, and much of this population is not diagnosed before its chronic manifestations become established⁽³⁾, thus representing a major public health problem for the country⁽⁴⁾.

The high DM prevalence is due to several factors, such as longer life expectancy, sedentary lifestyle, obesity, and urbanization⁽⁵⁾. Acute and chronic complications of diabetes lead to high morbidity and mortality, resulting in high

costs for the health systems. Global expenditure related to diabetes in 2010 was estimated at 11.6% of the total health care spending⁽²⁾.

DM and arterial systemic hypertension (ASH) account for the first cause of mortality and hospitalizations in the Unified Health System (SUS - *Sistema Único de Saúde*) and also represent more than half of the primary diagnosis in people with chronic renal insufficiency undergoing dialysis⁽⁶⁾.

Metabolic control combined with preventive and treatment interventions can protect from or delay the onset of chronic complications arising from DM⁽⁵⁾.

The Primary Care Information System (SIAB - *Sistema de Informação da Atenção Básica*) is composed of several questionnaires applied by the Family Health Team (FHT), and the recorded responses, which are obtained by people's self-reference, play an important role in this process, as it allows performing an epidemiological survey of individuals with diabetes registered at the primary healthcare system. It is a facilitator of the work processes in the Family Health Strategy (FHS), subsidizing improvements and more accurate decisions in the health area⁽⁷⁾, which enables the visualization of the population's epidemiological and health profile in its catchment area, offering a diagnosis of the population's health status. It also facilitates data collection relating to the population registered at the FHS, and such data can and should be used for health planning⁽⁸⁾.

The epidemiological analysis of people with diabetes reveals information that enables the implementation of public health policies in order to reduce the difficulties of these people and their families, and provide improvements to their quality of life (QoL)⁽⁵⁾. Given that DM can lead to adverse impacts on the affected individuals' QoL, as it is a chronic condition in their lives, in families, and in society^(9,5), the data collection and analysis relating to this disease is of fundamental importance⁽⁴⁾.

Thus, this study aims to evaluate the self-reported prevalence and the profile of people with diabetes mellitus (DM).

METHODS

This is a cross-sectional, retrospective study carried out in the municipality of Lajeado, RS, which analyzed data of the period 2011-2013 on DM patients registered at SIAB. For inclusion in the study, the patient should be 15 years or older, regardless of sex, and their questionnaires in the SIAB should be correctly filled in. Data was obtained from the Municipal Health Department in the months from March to April 2014.

The municipality of Lajeado is located in Vale do Taquari, the central region of Rio Grande do Sul State, in

Brazil. This city has 71,445 inhabitants, of whom 71,180 are living in the urban area and 265 in rural areas, which characterizes a high degree of urbanization (99.9%)⁽¹⁰⁾. According to the Brazilian Institute of Geography and Statistics (IBGE - *Instituto Brasileiro de Geografia e Estatística*), the population of Lajeado in 2013 was 76,187 inhabitants⁽¹¹⁾.

The variables retrieved from the system were: prevalence of DM, sex, literacy, age, age range, diabetes associated with hypertension, and DM associated with pregnancy, for women.

Descriptive analysis of data was performed using SPSS version 21, presenting data as relative frequency (%), whereas age was presented as mean (\pm standard deviation).

This study followed the precepts of the National Health Council Resolution 466/12, which regulates researches involving human beings, being approved by Opinion No. 231467. The use of data recorded in SIAB was authorized by the Municipal Health Secretariat of Lajeado, RS, by signature of the Letter of Consent. Researchers collected and analyzed data in an ethical and respectful manner as regards the municipality and scientific knowledge, in compliance with the Term of Consent to the use of information.

RESULTS

The population of the municipality of Lajeado that was aged 15 years or more and registered at SIAB in 2011 was 28,794; in 2012, it was 36,662; and in 2013 it was 37,495. The prevalence of people with DM registered at SIAB, in this study sample, from the year 2011 to 2013 was 3.0% (n=850) in 2011; 3.1% (n=1,131) in 2012; and 3.0% (n=1,131) in 2013 (Table I).

Regarding gender, in the three years studied, the majority of the population registered was female, representing 63.2% (n=537), 62.9% (n=708) and 63.7% (n=721) in years 2011, 2012, and 2013, respectively. The

mean age of the population was 61.7 (\pm 13.3) in 2011, 61.2 (\pm 13.8) in 2012 and 62.0 (\pm 14.0) years in 2013. As for the level of education the literacy percentage was 88% (n=748) in 2011, 89.9% (n=1,017) in 2012, and 90.7% (n=1,026) in 2013 (Table I).

By analyzing the population with diabetes according to the age range, it was observed that, in the three years studied, the registry of DM prevalence increased in the age range of 15 to 49 years. A large increase in prevalence was observed from 60 years of age, and the highest prevalence of DM was registered among patients aged 60 to 69 years (Table II).

With respect to the age range by sex, it was observed that in 2011, most people with diabetes aged between 15 and 49 years are men, but from the age of 50 on, the DM prevalence is higher in women. In 2012 and 2013, the majority of people with diabetes between 15 and 29 years old are men, and above the age of 30, women represent the majority of people with diabetes. Above the age of 90, there is a high prevalence of females (Table II).

Regarding the number of individuals with diabetes and hypertension over 15 years of age, it was observed that the percentage of people with the two combined disorders is always higher than that of people who have only DM. The prevalence of hypertensive diabetic patients was 77.5% (n=659) in 2011, 76.1% (n=861) in 2012, and 76.9% (n=870) in 2013 (Figure 1).

The analysis of the population with hypertension in the diabetic population of Lajeado, RS, evidenced that, in the years 2012 and 2013, there were cases of people with diabetes and hypertension, starting from the age range of 15-19 years. Additionally, it was observed that the percentage of people with diabetes who also have hypertension increases as the age range increases, in the three years under study (Table III).

The prevalence of pregnant women with DM was 0.5% (n=2) in 2012 and 0.3% (n=1) in 2013, with no cases in 2011.

Table I - Population aged 15 years or above, registered at SIAB in Lajeado, RS, and profile of people with diabetes mellitus in this population. Lajeado, RS, 2011 to 2013.

Year	SIAB Population (15 years or above)	Diabetics (n) %	Sex (n) %		Mean Age (SD)	Literate (n) %
			M	F		
2011	28,794	850 (3.0)	313 (36.8)	537 (63.2)	61.7 (13.3)	748 (88.0)
2012	36,662	1,131 (3.1)	423 (37.4)	708 (62.6)	61.2 (13.8)	1,017 (89.9)
2013	37,495	1,131 (3.0)	410 (36.3)	721 (63.7)	62.0 (14.0)	1,026 (90.7)

M=Male; F=Female; SD=Standard deviation; SIAB= Brazilian primary care information system (*Sistema de Informação da Atenção Básica*)

Table II - Prevalence of diabetes mellitus, according to age range and sex, in the population of Lajeado, RS, aged 15 years or above, registered at SIAB. Lajeado, RS, 2011 to 2013.

Age range	2011			2012			2013		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
	n %	n %	n %	n %	n %	n %	n %	n %	n %
	3 (75.0)	1 (25.0)	4 (0.5)	4 (57.1)	3 (42.9)	7 (0.6)	4 (50.0)	4 (50.0)	8 (0.7)
15-19	11 (61.1)	7 (38.9)	18 (2.1)	18 (62.1)	11 (37.9)	29 (2.6)	7 (63.0)	10 (37)	27 (2.4)
20-29	11 (45.8)	13 (54.2)	24 (2.8)	15 (37.5)	25 (62.5)	40 (3.5)	12 (30.0)	28 (70.0)	40 (3.5)
30-39	45 (50.6)	44 (49.4)	89 (10.5)	56 (43.1)	74 (56.9)	130 (11.5)	45 (38.8)	71 (61.2)	116 (10.3)
40-49	81 (39.7)	123 (60.3)	204 (24.0)	109 (40.8)	158 (59.2)	267 (23.6)	106 (41.4)	150 (58.6)	256 (22.6)
50-59	84 (30.9)	188 (69.1)	272 (32.0)	110 (32.4)	230 (67.6)	340 (30.1)	104 (31.2)	229 (68.8)	333 (29.4)
60-69	65 (37.4)	109 (62.6)	174 (20.5)	89 (37.7)	147 (62.3)	237 (21.0)	98 (38.7)	155 (61.3)	253 (22.4)
70-79	13 (21.0)	49 (79.0)	62 (7.3)	22 (28.9)	154 (71.1)	76 (6.7)	23 (26.1)	65 (73.9)	88 (7.8)
80-89	0 (0.0)	3 (100.0)	3 (0.4)	0 (0.0)	5 (100.0)	5 (0.4)	1 (10.0)	9 (90.0)	10 (0.9)
90 >	313 (36.8)	537 (63.2)	850 (100.0)	423 (37.4)	708 (62.6)	1131 (100.0)	410 (36.3)	721 (63.7)	1131 (100.0)
Total									

Table III - Prevalence of SAH, according to age range, in the population of Lajeado, RS, with Diabetes mellitus, aged 15 years or above, registered at SIAB. Lajeado, RS, 2011 to 2013.

Age range	2011	2012	2013
	n %	n %	n %
15-19	0 (0.0)	1 (14.3)	1 (12.5)
20-29	2 (11.1)	4 (13.8)	4 (14.8)
30-39	9 (37.5)	12 (30.0)	14 (35.0)
40-49	55 (61.8)	80 (61.5)	68 (58.6)
50-59	150 (73.5)	193 (72.3)	184 (71.9)
60-69	233 (85.7)	291 (85.6)	285 (85.6)
70-79	154 (88.5)	208 (88.1)	224 (88.5)
80-89	53 (85.5)	68 (89.5)	81 (92.0)
90 >	3 (100.0)	4 (80.0)	9 (90.0)
Total	659 (77.5)	861 (76.1)	870 (76.9)

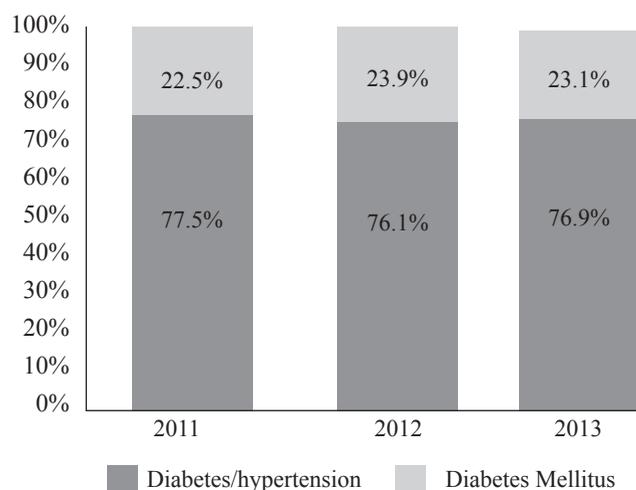


Figure 1 - Prevalence of DM with or without SAH in the population of Lajeado, RS, with Diabetes mellitus, aged 15 years or above, registered at SIAB. Lajeado, RS, 2011 to 2013.

DISCUSSION

By analyzing the prevalence of DM in the population of Lajeado, RS, registered at SIAB, in the years 2011-2013, its value was found below the national average. However, it remained equivalent in the three years studied, i.e., there was no decrease in the prevalence of this disease in this population. In Brazil, according to the epidemiological data provided by the survey VIGITEL Brazil, the prevalence of DM was 5.6%, but in a large part of this population, the disease is not diagnosed before their chronic manifestations have become established⁽³⁾. Another study verified that the prevalence of DM was above 10% in most Brazilian states⁽¹²⁾.

An epidemiological study of the living conditions of the population of Cuiabá, MT, held in 2011 with SIAB data, found a 3.21% prevalence of DM⁽¹³⁾. Another study reported that only 1.4% of the city's population is affected by diabetes⁽¹⁴⁾. In another study, conducted in the region of Vale do Taquari, RS, where is located the city of Lajeado, RS, including users of Primary Healthcare Units (PHU), 15.34% of the survey participants presented impaired fasting glucose (>126 mg/dl)⁽¹⁵⁾.

As to the prevalence of literacy in the diabetic population of Lajeado, RS, it was observed a high percentage of illiterates. A study conducted in São Paulo found that 13% of the diabetics are illiterate⁽¹⁶⁾. Another study assessing the adult population of Pernambuco hinterlands reported that all the cases of diabetes were among illiterates or individuals with only primary education⁽¹⁷⁾. It is also worth mentioning that the study of the diabetic population in the municipality

of Teixeiras, MG, concluded that 40.9% of that population is illiterate⁽¹⁸⁾. It is observed that the percentage of DM individuals who are illiterate is still lower in Lajeado, RS, than in other studies conducted in Brazil⁽¹⁶⁻¹⁸⁾.

Low educational level can stimulate non-adherence to the treatment plan, due to difficulty in reading and understanding the prescription, and thus increase the risks to health. Furthermore, the low level of education can limit the access to information, due to impairment of reading, writing, and speaking skills, and may as well hinder the understanding of the complex mechanisms of the disease and its treatment⁽¹⁶⁾. This situation poses challenges to the multidisciplinary health team regarding the strategies to be used in order to increase adherence to the treatment of diabetic individuals⁽¹⁹⁾.

Regarding gender, it was found that the prevalence of people with DM in the municipality of Lajeado, RS, is higher among women (around 63%), corroborating other studies. A study conducted in São Paulo found a predominance of females (69.11%) in the diabetic population⁽¹⁶⁾. In all regions of Brazil, in 2008, the prevalence of diabetes among women was higher compared to men⁽⁴⁾. A research that outlined the profile of diabetic patients in the state of Pará shows that there is a predominance of female diabetics (67.08%)⁽²⁰⁾.

In this study, the prevalence of diabetes increased as the age increases: from 60 years of age and upwards, there is a large increase in the prevalence of diabetes. A study that described the social and health profile, and the lifestyle of the diabetic population of Teixeiras, MG, also found a predominance of older individuals, with mean age of 63.5 ($\pm 13,12$)⁽¹⁸⁾. In Brazil, data from VIGITEL, 2011, shows that the prevalence of DM increases with the age of the population: 21.6% of Brazilians aged above 65 years reported the disease, a much higher rate than among people aged between 18 and 24, where only 0.6% are individuals with diabetes⁽³⁾.

As to the prevalence of hypertension in people with diabetes, it was observed that the percentage was around 77%, with an increase during the three years assessed. It was found that the majority of diabetic people present hypertension. The prevalence of associated diabetes and hypertension is growing rapidly in Brazil⁽⁴⁾. A study investigating the prevalence of DM, its relation with sociodemographic characteristics, and other cardiovascular risk factors in an adult population of Pernambuco hinterlands, found that 68.0% of diabetic patients present hypertension⁽¹⁷⁾.

The analysis of the hypertension prevalence according to the age range in the population with DM in Lajeado, RS, for the years 2012 and 2013, evidenced cases of hypertensive diabetics since the group aged 15-19 years.

Arterial hypertension in the young population is increasing due to changes in routine life, such as eating habits and physical inactivity, which can lead to obesity and are considered risk factors for hypertension. Moreover, there is a lack of medical monitoring for young people, given that only few among these mind to undergo periodic medical evaluations⁽²¹⁾.

On the variable “prevalence of pregnant women with diabetes”, it was found that in 2012 and 2013, there was a low prevalence (0.5% and 0.3%), and no cases in 2011. Again, it is emphasized that this data is self-reported, and there may be pregnant women with undiagnosed gestational DM. Gestational DM is the most common metabolic problem in pregnancy and has a prevalence between 3% and 13% of the pregnancies. The estimated prevalence of this disease in Brazil is 7.6% among pregnant women aged over 20 years⁽²²⁾. A study that evaluated the prevalence of diabetes in pregnant women of Vitória, ES, found a prevalence of 5.8%⁽²³⁾.

It is worth highlighting the importance of conducting researches that assess the prevalence of chronic diseases like diabetes, given that, in addition to enabling the recognition of the population affected by the disease, they can also contribute to the planning of public policies and to design health strategies aimed at health promotion⁽²⁴⁾.

It is believed that this study may have as limitation the fact that it was conducted with self-reported diabetic individuals. Such situation can contribute to find a low percentage of this population, since DM is a disease that often remains asymptomatic, and consequently, some people have DM, but are unaware of its existence.

It is also considered that could be another limitation of the study the fact that the SIAB not cover all persons residing in Lajeado-RS municipality. According to IBGE, the general population aged 15 or more in the city in 2011 was 64,470; of these, 44.7% (n = 28,794) subjects were enrolled in the SIAB. In 2012, the general population aged 15 or more was 64 083 were registered and 57.2% (n = 36,662) individuals. Already in 2013, the population of Lajeado-RS with 15 years or more was 67,397, and 55.6% (n = 37,495) individuals registered in SIAB.

The fact that SIAB does not comprise all the individuals residing in Lajeado, RS, may be regarded another limitation of the study. According to IBGE, the general population aged 15 years or above in the city in 2011 was 64,470; of these, 44.7% (n=28,794) subjects were registered at SIAB. In 2012, the general population aged 15 or more was 64,083, and 57.2% (n=36,662) individuals were registered. In 2013, the population of Lajeado, RS aged 15 years or more was 67,397, and 55.6% (n = 37,495) individuals were registered at SIAB.

CONCLUSION

It was observed that the prevalence of self-reported diabetes in people aged 15 years or above, registered at SIAB in the municipality of Lajeado, RS, from 2011 to 2013, remained equivalent in the years 2011 to 2013, and below the national average. This population was found to be mostly above 60 years of age, literate (though with a high percentage of illiterates), female, with hypertension, and with a low prevalence of diabetes among pregnant women. These characteristics are important for the municipal government to plan health promotion actions appropriate to the population.

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REFERENCES

1. O'keefe JH, Bell DSH, Wyne, KL. Fundamentos em diabetes. 4ª ed. Porto Alegre: Artmed; 2010.
2. International Diabetes Federation. IDF Diabetes Atlas. 6th ed. Brussels: International Diabetes Federation; 2013 [accessed on 2014 April 22]. Available on: http://www.idf.org/sites/default/files/EN_6E_Atlas_Full_0.pdf
3. Ministério da Saúde (BR), Secretaria de Vigilância em Saúde, Secretaria de Gestão Estratégica e Participativa. Vigitel-Brasil 2011: vigilância de fatores de risco e proteção para doenças crônicas por inquérito telefônico. Brasília: Ministério da Saúde; 2012.
4. Freitas LRS, Garcia LP. Evolução da prevalência do diabetes e deste associado à hipertensão arterial no Brasil: análise da Pesquisa Nacional por Amostra de Domicílios, 1998, 2003 e 2008. *Epidemiol Serv Saúde*. 2012;21(1):7-19.
5. Ministério da Saúde (BR), Secretaria de Atenção à Saúde, Departamento de Atenção Básica. Estratégias para o cuidado da pessoa com doença crônica: diabetes mellitus. Brasília: Ministério da Saúde; 2013.
6. Schmidt MI, Duncan BB, Stevens A, Luft V, Iser BPM, Moura L, et al. Doenças crônicas não transmissíveis no Brasil: mortalidade, morbidade e fatores de risco. In: Ministério da Saúde (BR). Saúde Brasil 2009: uma análise da situação de saúde e da Agenda Nacional e Internacional de Prioridades em Saúde. Brasília; 2010. p. 111-36.

7. Duarte MLC, Tedesco JR, Parcianello RR. O uso do sistema de informação na estratégia saúde da família: percepções dos enfermeiros. *Rev Gaúcha Enferm.* 2012;33(4):111-7.
8. Carreno I, Moreschi C, Marina B, Hendges DJB, Rempel C, Oliveira MMC. Análise da utilização das informações do Sistema de Informação de Atenção Básica – SIAB: uma revisão integrativa. *Ciênc Saúde Coletiva.* 2015; 20(3):947-56.
9. Silveira JAA, Resende HMP, Lucena FAM, Pereira JG. Características da assistência à saúde a pessoas com diabetes mellitus acompanhadas na Unidade de Saúde da Família Pedregal II, em Cuiabá, MT: reflexões para a equipe de saúde. *Mundo Saúde.* 2010;34(1):43-9.
10. Instituto Brasileiro de Geografia e Estatística - IBGE. XII Censo Demográfico [Internet]. 2010 [accessed on 2014 March 22]. Available on: <http://www.ibge.gov.br/home/estatistica/populacao/censo2010/>
11. Instituto Brasileiro de Geografia e Estatística - IBGE. XII Censo Demográfico [Internet]. 2013 [accessed on March 12, 2014]. Available on: <http://www.ibge.gov.br>
12. Dias JCR, Campos JADB. Diabetes mellitus: razão de prevalências nas diferentes regiões geográficas no Brasil, 2002 - 2007. *Ciênc Saúde Coletiva.* 2012;17(1):239-44.
13. Silva MCN, Ávilla AL, Silva BPS, Alves LS, Santos DS, Rafael JC. Perfil epidemiológico e social da população atendida em uma Unidade Básica de Saúde em Cuiabá. *Gestão & Saúde.* 2013;4(2):25-37.
14. Silva LM. Prevalência de diabetes melito e fatores associados em população urbana adulta de baixa escolaridade e renda do sertão nordestino brasileiro. *Arq Bras Endocrinol Metab.* 2010;54(6):560-6.
15. Rempel C, Strohschoen AG, Hoerlle JL, Sartori MAB, Busch GC, Périco E, et al. Perfil dos usuários de Unidades Básicas de Saúde do Vale do Taquari: fatores de risco de diabetes e utilização de fitoterápicos. *ConScientiae Saúde.* 2010;19(1):17-24.
16. Rodrigues FFL, Santos MA, Teixeira CRS, Gonela JT, Zanetti ML. Relação entre conhecimento, atitude, escolaridade e tempo de doença em indivíduos com diabetes mellitus. *Acta Paul Enferm.* 2012;25(2):284-90.
17. Lyra R, Silva RS, Montenegro RMJ, Matos MVC, César NJB, Silva LM. Prevalência de diabetes melito e fatores associados em população urbana adulta de baixa escolaridade e renda do sertão nordestino brasileiro. *Arq Bras Endocrinol Metab.* 2010;54(6):560-6.
18. Cotta RMM, Batista KCS, Reis RS, Souza GADG, Dias G, Castro FAF, et al. Perfil socio-sanitário e estilo de vida de hipertensos e/ou diabéticos, usuários do Programa de Saúde da Família no município de Teixeira, MG. *Ciênc Saúde Coletiva.* 2009;14(4):1251-60.
19. Xavier ATF, Bittar DB, Ataíde MBC. Crenças no autocuidado em Diabetes: implicações para a prática. *Texto & Contexto Enferm.* 2009;18(1):124-30.
20. Palmeira MM, Silva LL, Sousa RM, Cordeiro CRG. Perfil epidemiológico dos pacientes diabéticos atendidos no Serviço de Diagnóstico em Cardiologia da Universidade do Estado do Pará. *RBM Rev Bras Med.* 2011;11(2):29-32.
21. Vasconcelos KNC, Silva JCL, Groppo FC, Bergamaschi CC, Cabral LN, Athayde MMS. Prevalência de jovens hipertensos não diagnosticados atendidos na policlínica odontológica da Universidade do Estado do Amazonas. *Odonto.* 2012;20(39):89-98.
22. Ministério da Saúde (BR), Secretaria de Atenção à Saúde, Departamento de Atenção Básica. Atenção ao pré-natal de baixo risco. Brasília: Ministério da Saúde; 2012.
23. Massucatti LA, Pereira RA, Maioli TU. Prevalência de diabetes gestacional em unidades de saúde básica. *Rev Enferm Atenção Saúde.* 2012;1(1):70-9.
24. Pozzobon A, Hoerlle JL, Carreno I. Prevalência de diabetes e hipertensão em indivíduos cadastrados no sistema de informação da atenção básica (SIAB) de Lajeado/RS- Brasil. *Rev Bras Promoç Saúde.* 2014;27(3):295-302.

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