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RESEARCH

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The Self-Care of Users Bearing Diabetes Mellitus: Socio-Demographic, Clinical and Therapeutic Profiles

Autocuidado de Usuários com Diabetes Mellitus: Perfil Sociodemográfico, Clínico e Terapêutico

Auto-cuidado de los Pacientes con Diabetes Mellitus: Sociodemográfico, Clínico y Terapéutico

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ABSTRACT

Objective: The study's goal has been to describe the socio-demographic, clinical and therapeutic profiles and the self-care activities of users bearing diabetes mellitus in a basic care service. **Methods**: It is a descriptive and cohort study with quantitative approach, carried out in a Basic Health Unit from October 2015 to October 2016, in an urban area of the Vitória de Santo *Antão* city*, Pernambuco*, Brazil. It was surveyed 164 users bearing diabetes mellitus. Data collection has been done through an interview, using two structured questionnaires **Results**: The results point to a situation characterized by a higher female prevalence (53.7%), with average age of ± 59.66 years old, satisfactory monitoring of capillary glycemia (87.8%) and higher score is observed for the medication practices. **Conclusion:** It was concluded that it is necessary to provide education programs by a multiprofessional team aimed at the users bearing diabetes mellitus in order to meet the care complexity.

Descriptors: Health profile, Diabetes Mellitus, Self-Care.

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RESUMO

Objetivo: Descrever o perfil sociodemográfico clínico e terapêutico e as atividades de autocuidado de usuários com diabetes mellitus em um serviço de atenção básica. **Métodos:** Estudo transversal, de caráter descritivo, com abordagem quantitativa, desenvolvido em uma Unidade Básica de Saúde, entre outubro de 2015 e outubro de 2016, em uma área urbana do Munícipio de Vitória de Santo Antão, Pernambuco, Brasil, com 164 usuários com diabetes mellitus. Os dados foram obtidos mediante entrevista, utilizando-se dois questionários estruturados. **Resultados:** Os resultados apontam para uma situação caracterizada pela prevalência de usuários do sexo feminino (53,7%), com média de idade de ± 59,66 anos, monitorização da glicemia capilar satisfatória (87,8%) e com maior pontuação para as práticas medicamentosas. **Conclusão:** Conclui-se ser necessário o fornecimento de programas educativos por uma equipe multiprofissional, direcionados aos usuários com diabetes mellitus com o intuito de atender à complexidade do cuidado.

Descritores: Perfil de saúde, Diabetes mellitus, Autocuidado.

RESUMEN

Objetivo: Describir el auto-cuidado sociodemográfico y clínico y terapéutico de los pacientes con diabetes mellitus en un servicio básico. **Métodos:** Estudio transversal de descriptivo, con enfoque cuantitativo, desarrollado en una Unidad Básica de Salud, entre octubre de 2015 y octubre de 2016, en un área urbana del municipio Santo Antao Victoria, Pernambuco, Brasil, con 164 los pacientes con diabetes mellitus. Los datos fueron recolectados a través de entrevistas utilizando dos cuestionarios estructurados. **Resultados:** Los resultados apuntan a una situación que se caracteriza por una mayor prevalencia de mujeres (53,7%), usuarios con una edad media ± 59.66, and la glucemia satisfactoria (87 , 8%) y una puntuación más alta para las prácticas médicas. **Conclusión:** Concluye que es necesario realizar programas de educación por un equipo multidisciplinar, dirigida a los pacientes con diabetes mellitus con el fin de atender la complejidad de la atención..

Descriptores: Perfil de salud, La diabetes mellitus, Autocuidado.

INTRODUCTION

Chronic conditions characterized by long clinical course and, in most cases, by irreversibility, constitute public health problems, which persistence requires a permanent and integral management and administration of the *Sistema Único de Saúde (SUS)* [Unified Health System].[1] Changes in the world population in the last century, such as the increase in morbidity and mortality, the decrease in the rate of infectious and parasitic diseases, sedentary lifestyle and overweight, redirected the susceptibility profile of these diseases.[2] The meeting of these factors associated with a drop in the mortality rate and life expectancy, corroborate the persistence of chronic diseases such as diabetes.[1-2]

Diabetes mellitus (DM), a group of metabolic diseases, is characterized by hyperglycemia resulting from a failure in the metabolism of lipids, carbohydrates and proteins, where its causes are associated with defects in insulin secretion, insulin action and/or even both of it.[3] The American Diabetes Organization and the Brazilian Society of Diabetes classify this pathology according to etiology in four clinical types: type 1 Diabetes Mellitus, type 2 Diabetes Mellitus, Gestational DM and other specific types of Diabetes Mellitus.[3-4]

DM is notable for its high global prevalence and high morbidity and mortality rates.[2] Estimates of the global prevalence of DM in 2013 showed that 387 million people had DM, of which 46% had no previous diagnosis.[5] In Central America and the South America, these estimates were 24 million individuals, and by 2015, there were 38.5 million people.[6] It is also worth noting that its worldwide prevalence among adults (20 - 79 years old) will be 7.7% with 439 million adults by 2030.[3]

Complications caused by DM, such as nephropathy, neuropathy and retinopathy, are responsible for high rates of morbidity and mortality, making it a very costly disease for the individual, family, and health system.[2] World-wide diabetes-related expenditures in 2014 were estimated in 11% of total adult health spending.[6] In Brazil, for example, estimates for direct cost oscillate around $3.9 billion, compared with $0.8 billion to Argentina and $2 billion to Mexico.[3]

For the treatment of individuals, in addition to the use of medications, self-care activities are significant, since it aids in metabolic control, encompasses a continuing education program and lifestyle modifications (such as physical activity insertion and food re-education, abolition of smoking and alcohol).[3] Thus, self-care stimulates the development of user autonomy with diabetes, providing greater allocation of resources focused on educational and preventive measures.[6]

In the Nursing field, the nurse Dorothea Elizabeth Orem pioneered reflections on self-care, whose concepts encompass self-care, self-care activities, self-care therapeutic requirements, and self-care precepts. In hers theory, Orem defends the responsibility of the individuals to take care of themselves and the importance of the nursing professional in the identification of the cares that satisfy the clients' needs.

Considering the complexities of DM already discussed, the development of studies on situational diagnoses of patients with this pathology can foster educational actions with a focus on health promotion and prevention and the reduction of long-term complications caused by diabetes. In addition to promoting improvements in the life quality of the population under study, and also reduce the costs of the system in the treatment of this pathology.

Given the above, this research was guided by the following question: What is the situational diagnosis to users of the Unified Health System bearing Diabetes Mellitus? Considering the lack of further studies about the characterization of these users, this study aims to describe the socio-demographic, clinical and therapeutic profiles, and also the self-care activities of users bearing diabetes mellitus in a basic health care service

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METHODS

It is a descriptive and cohort study with quantitative approach performed at a Basic Health Unit (BHU) in the *Vitória de Santo Antão* city, *Pernambuco*, Brazil, from October 2015 to October 2016. The BHU was randomly selected by the researcher.

The population registered with DM in the BHU corresponded to 185 users. All users enrolled in BHU who met the following inclusion criteria: age equal to or greater than 18 years old, having DM, presenting verbal communication skills were invited to participate in the study. Users were excluded: patients with neurological and cognitive deficits. Even with the deliberate effort by the researcher to identify the residences, there was a loss of 21 users because they were located in outdated addresses. Therefore, 164 users bearing diabetes mellitus participated.

Patient access was provided through the data provided by the Basic Health Information System's software and by the review of the Basic Health Unit's diabetes mellitus case records. Data collection was performed through the active search with the Community Health Agents, through two instruments composed of closed questions. The first questionnaire, elaborated through a previous study, included demographic (sex and age), socioeconomic (education, occupation and income), clinical and related to capillary glycemia monitoring (DM type, disease timing, last visit, treatment current health institution for follow-up, capillary glucose measurement, monitor acquisition and strips for evaluation of capillary glycemia, participation in an educational program).

The second research tool was the Diabetes Self-Care Activities Questionnaire (DSCA), a translated, adapted and validated version for Brazilian culture.8 It evaluates self-care activities based on 07 dimensions and 17 evaluation items: feeding (three items), physical activity (two items), glycemic monitoring (two items), foot care (three items), medication use (two items) and smoking (three items).[8]

The evaluation is parameterized on days of the week, on a scale of 0 to 7, referring to the behaviors of the last seven days. In the scale, zero corresponds to the less desirable situation and the seven most desirable, except in the specific feed dimension, where the values are reversed. Smoking habits are considered in isolation, because they are coded differently, with an appreciation of the average number of cigarettes consumed per day.[8]

Data were collected at the subjects' homes, from June to August 2016. In order to allow the insertion of non-literate individuals, the collection process was assisted by the researcher in completing the instruments. Visits lasted approximately 25 minutes.

After data collection, a database was built in Excel for Windows-2010 spreadsheet and analyzed through the Statistical Package for Social Sciences program (SPSS - version 16). Continuous variables were tabulated in mean and standard deviation values; the categorical variables, by means of absolute frequency and percentage. The results are presented in table form with their respective absolute and relative frequencies.

According to the Resolution No. 466/12 from the National Health Council, this project, numbered CAAE: 54265715.8.0000.5208, received approval from the Research Ethics Committee of the Health Sciences Center of the Universidade Federal de Pernambuco (UFPE).[9]

RESULTS

Table 1 shows the distribution of the demographic and socioeconomic variables of the users bearing DM from the studied BHU. The sex-related data point to 46.3% of male participation and 53.7% of female sex, and, in relation to age, a variance was observed from 19 to 98 years old (59.66 ± 16.96).

Regarding the marital status, the majority of the population (50%) are married, retired (34.8%) and with average and monthly family income of 793.24 reais, ranging from 200.00 to 2,640.00 Reais. As for schooling, 31.6% reported being illiterate, 29.3% had completed elementary school and 23.8% did not complete elementary school, a circumstance that may characterize the population with low level of schooling. Concerning the occupation, the prevalence of retired users (34.8%) is observed, followed by 15% of unemployed individuals and 14% of households.

Table 1: Characteristics of the study population according to the demographic and socioeconomic variables. Vitória de Santo Antão, PE, Brazil, 2016. (n = 164)

Variable	n	%
Sex		
Male	76	46.3
Female	88	53.7
Marital Status		
Single	13	7.9
Married	82	50.0
Live with the partner	10	6.1
Divorced	34	20.8
Widower	25	15.2
Schooling		
Illiterate	52	31.6
Complete Elementary School	48	29.3
Incomplete Elementary School	39	23.8
Complete High School	11	6.7
Incomplete High School	6	3.7
Literate without going to school	8	4.9
Occupation		
Unemployed	26	15.9
Stay at Home	23	14.0
Student	8	4.9
Retired	57	34.8
Salaried Worker	18	11.0
Housekeeper	3	1.8
Rural Producer	7	4.3
Liberal Professional	17	10.4
Public Agent	5	3.0
	Average ± SD	**(Minimum; Maximum)**
Age	59.66 ± 16.96	(19; 98)
Income	793.24 ± 328.20	(200; 2640)

Table 2 describes the characteristics of the population regarding clinical variables and related to capillary glucose monitoring. Regarding the disease timing, the mean and standard deviation were 7.37 ± 7.56 with a maximum time of 41 years old. Regarding the type of diabetes, 39% presented Type 2 Diabetes Mellitus and 53% did not know how to report. About the treatment, 86% used oral antidiabetic drugs and 15.9% used insulin. Of these, 92.7% stated that they got the medications at the Unit. Within non-medicated treatment, 72% reported following diet and 53% exercising.

The time of the last medical appointment varied between 1 and 12 months (7.37 ± 7.56). Regarding the capillary glycemia monitoring, 87.8% were identified with glycosimeter possession. However, 97% did not win the monitoring strips in recent months. Regarding the Education Programs, 79.3% of the population denied attending it.

Table 2: Characteristics of the studied population according to the clinical variables and related to capillary glycemia monitoring. Vitória de Santo Antão, PE, Brazil, 2016. (n = 164)

Variable	n	%
Type of DM		
Type 1	11	6.7
Type 2	64	39.0
Gestational	2	1.2
Does not know how to inform	87	53.0
Treatment		
Oral Antidiabetic Drugs	141	86.0
Insulin	26	15.9
Diet	118	72.0
Physical Activity	87	53.0
Medication		
Particular	64	39.0
Popular	89	54.3
BHU	152	92.7
Others	12	7.3
Health institution for follow-up		
BHU	153	93.3
Ambulatory	14	8.5
Contracted	3	1.8
Measures capillary glycemia or fingertip		
Yes	144	87.8
No	20	12.2
How did you get the Glucose Monitor?		
Bought	34	20.7
Gained	113	68.9
Does not have one	17	10.4
Has won the public service strips for capillary glycemia in recent months		
Yes	5	3.0
No	159	97.0
Participate in some educational program		
Yes	34	20.7
No	130	79.3
	Average ± SD	**(Minimum; Maximum)**
Disease timing	7.37 ± 7.56	(0; 41)
Last Consultation	3.35 ± 2.19	(1; 12)

Table 3 shows the assessment of items in the DSCA.[8] People with Diabetes Mellitus who were followed up during the survey reported "following a healthy diet" averaging 3.69 ± 2.78 days per week. Regarding the item "follow dietary guidance, given by a health professional (doctor, nurse, nutritionist)", this average fell to 2.29 ± 2.76 days.

When questioned about the consumption of "five or more servings of fruits and/or vegetables", an average of days of 2.26 ± 2.60 was observed. The consumption of sweets expressed an average of 1.64 ± 1.80 days. Red meat intake, however, rose to 2.57 ± 2.64 days. In the field "Physical Activity", it was verified that the item "performing physical activity for at least 30 minutes" obtained an average of 0.54 days, similar to the questioning about "specific physical exercise".

Users reported assessing blood sugar in an average of days found at 1.15 ± 1.52 days of the week. This value, however, differs from the item "assessing blood sugar the number of times recommended by the doctor or nurse" whose quantification was 0.24 ± 0.89 days.

Regarding medication use, users took insulin injections at a mean of 0.95 ± 2.28 days, and reported using recommended medications at a mean of 4.80 ± 2.77 days. Users usually observe the shoes before putting them on 1.52 ± 2.48 days. The habit of examining the feet and drying between the toes is found in averages of days of 1.05 ± 2.01 and 1.20 ± 2.18, respectively.

Table 3: Diabetes Self-Care Activity Questionnaire (DSCA) in the studied sample. Vitória de Santo Antão, PE, Brazil, 2016. (n = 164)

Variable	Average ± SD
Follow a healthy diet.	3.69 ± 2.78
Follow the orientations about food intake.	2.29 ± 2.76
Eat five or more fruit and vegetable choices.	2.26 ± 2.60
Eat foods high in fat composition.	2.57 ± 2.64
Eat candies.	1.64 ± 1.80
Perform physical activity for at least 30 minutes daily.	0.54 ± 1.27
Perform specific physical exercise (walking, swimming and etc.).	0.54 ± 1.25
Evaluate your blood sugar.	1.15 ± 1.52
Assess your blood sugar the recommended number of times.	0.24 ± 0.89
Examine the feet.	1.05 ± 2.01
In how many of the last SEVEN DAYS have you examined inside your shoes before you put them on.	1.52 ± 2.48
Dry your shoes between your toes after washing them.	1.20 ± 2.18
Take insulin injections as recommended.	0.95 ± 2.28
Take indicated number of diabetes pills.	4.80 ± 2.77

Regarding the smoking habit, 77.4% of the population reported not having smoked cigarettes in the previous seven days. Within a single day, the smokers used an average amount of 5.69 ± 3.39 cigarettes. When asked about "when did you smoke your last cigarette", 17.7% of people said they had never smoked and 52.4% smoked for more than two years.

DISCUSSION

Studies show that more females have been diagnosed with DM. A survey carried out in a Basic Health Unit in the city of *Ribeirão Preto - SP*, observed that 71.3% of the users bearing DM belonged to the female sex.[10] According to the study, data from the National Health Survey, performed in 2013 by the Health Ministry, detected a higher prevalence of DM in 5,433,262 women compared to 3,688,369 men.11 Thus, it is possible to observe a convergence of studies with the results achieved by this research, the results are also important for a larger number of women (53.7%). Given the data, it is necessary a performance of the nursing professionals, as well as the entire team, in stimulating male presence in this area of health care.

As for the occupation, the majority of the retirees were predominant (34.8%) and in relation to the civil status, the majority of the individuals are married (50%). These data are congruent with the prevalence study conducted in the interior of São Paulo State, with 52 people with

DM, in 2006, whose results showed a proportion of 68.5% for married individuals and 42.8 for retirees.

Illiteracy among users bearing DM is a worrying factor, since it can anticipate or trigger chronic complications, due to limited access to information, due to a possible impairment of the reading, and comprehension skills of the education activities as well as preventive self-care.[12] It was observed that 31.6% of people are illiterate, agreeing with a survey carried out in Maranhão with 120 people, was seen by 49.2% of people were illiterate.[13] In this sense, it is imperative to reinforce that schooling is a factor that contributes positively to an adequate treatment, in that it facilitates the access to the information that can result in an improvement without performance for the self-care. However, a health team prepared for DM education should develop strategies that facilitate or learn from users, even in precarious school conditions.

The increase in the number of individuals with DM is related to population growth and aging, greater urbanization, increasing prevalence of obesity and sedentary lifestyle, as well as the greater survival of the person bearing DM, which constitutes a demographic transition and, consequently, a Transition Epidemiological study.[14] In the present study, the average age of users was 59.66 years old, with a standard deviation of ± 16.96, with ages ranging from 19 to 98 years old. In this regard, a national multicenter study of DM prevalence, related to population aging and the increase in the life expectancy of the Brazilian population, reports the gradual increase of the disease after 50 years old.[15]

It was observed that the majority of subjects had type 2 DM (39%). It is noteworthy that, although all patients knew their diagnosis, 53% did not know the type of diabetes. This information corroborates the study carried out in São Paulo, with 357 users, whose results showed that 53.2% did not know what type of DM they had.16 The patient's knowledge about the type of diabetes mellitus can contribute to a better metabolic control and adherence to self-care practices. The nurse professional, then, has a different role in health education, when it is proposed to stimulate the user with DM as the protagonist of their health care.

Regarding the self-monitoring, it was found that a large part of the population (68.9%) had the Capillary Blood Glucose Monitor, however, 97% of the population did not receive the monitoring reagent strips in recent months. This reality is in disagreement with the Law 11,347/2006, which assumptions alleges the duty of the Unified Health System to guarantee the medicines and necessary inputs in the treatment of diabetes, and the Health Ministry is responsible for the granting of materials and supervision of the various instances of the health attention.[17]

Concerning health education, 79.3% of the population surveyed reported not participating in educational programs in diabetes mellitus. Since knowledge constitutes readiness for action, the compression on the disease obtained through educational programs can contribute to self-management in health. Therefore, health education is significant for redirecting self-care attitudes.[18]

Regarding the disease timing, the users bearing DM showed an average of 7.37 years of evolution. Another study carried out in *Minas Gerais* analyzed 1320 individuals enrolled in the Family Health Strategy and observed that 35.2% of them had DM between 5 and 10 years old. It is noteworthy that of these, 14.2% developed complications related to diabetes. The disease timing is a relevant variable, since the longer the diagnosis, the greater the risk of developing complications due to unsatisfactory metabolic control.[19]

A mean of 3.35 months was observed in relation to the last visit. According to the recommendations of the American Diabetes Organization and the Brazilian Society of Diabetes, the interval between visits for follow-up of patients with DM should be between 3 and 4 months for those that are stable and, in a shorter period of time, for unsatisfactory control.[3-4]

When analyzing the self-care activities of the studied population, a higher score was obtained for the medication practices and a lower score for the actions of monitoring the blood sugar level. Similar data were found in a study carried out in *Ribeirão Preto* city, using the DSCA, found an average of 7.0 days related to medications and 0.4 days for blood glucose monitoring practices.[20] These data are also similar To those described in a publication on adherence to the treatment of diabetes, whose data reveal high adherence rates to drug treatments. A study of 58 patients with DM, which has the objective of evaluating the general adherence of self-care practices, described that there was greater adherence in the item related to the use of medication as recommended (6.82 ± 0.97 days).[21] This fact suggests psycho-behavioral changes required in adherence to non-medication care.

In the domain, composed of items related to general feeding, it was noticed that the average number of days on "following a healthy diet" was higher when compared to the item related to the participation of the health professional in nutritional guidelines. This finding is found in a study carried out in *Ribeirão Preto (SP)*, Brazil, in which an average of 5.0 days of dietary intake was found compared to the second item (3.74), which is followed by diet with professional orientation.20 The study aiming to translate and culturally adapt the DSCA to Brazil revealed an average of 5.4 days of healthy diet compared to a mean of 5.45 days regarding professional orientation.[8]

For the specific food dimension, a higher average consumption of high fat foods and lower average consumption of sweets was observed. These data diverge with the study carried out in Ribeirão Preto, which has its results pointed to the higher consumption of candies.[18]

Findings regarding food demonstrates the need for Food Education practices in the balance of metabolic control. Furthermore, changing eating habits is still a challenge for DM treatment.

In this study, the practice of specific physical exercise obtained a mean of fewer days compared to the item "follow healthy diet", corroborating with the study by Gomides et al., 2012, in which an average of 1.0 day per week to perform physical exercises and 5.6 to follow a healthy diet.20 Thus, it is verified that non-pharmacological practices, such as physical activities, need to be stimulated by the Primary Care teams. It should also be noted that the evaluated users were adults and elderly, and therefore, they may have difficulties in the practice of physical exercise. In this way, the importance of a team of specialized professionals for this activity among the users of greater ages is emphasized.

Regarding the self-monitoring of blood in number of days, this essential measure in the control of diabetes mellitus.[20] In the present study, this activity obtained a mean of 0.5, in the scores of the DSCA, considered far from the desirable one, which is 7.

With regard to foot care, the item "examine inside the shoes" presented higher average compared to "dry the spaces between the toes". This finding is in agreement with a study carried out in the southeastern region of Brazil in 2012, in which the item related to finger drying also obtained a lower mean.[20] However, another research on self-care assessment in diabetes carried out in 2013, observed that the item about drying the toes between the toes after washing showed the highest average.[18] Even though there are differences between publications, it is extremely important to stimulate foot care as a way to prevent DM complications.

Within the "medication" dimension, the item related to insulin use obtained a lower mean of days. This fact suggests a relation to the smaller number of type 1 DM self-referenced users.

Regarding the smoking habits, the predominance of users that reported having smoked for more than two years diverged with a study in which a predominance (80%) was observed among people who reported not having smoked a cigarette, even if swallowed, during the last seven days.[22] Even with the low number of individuals that reported not having smoked in the previous seven days, it is necessary to promote actions that stimulate the fight against smoking habits. Since, research has shown a relationship between tobacco use and an increase in the number of amputations.[20]

The fact that the study was developed in a specific reality limits the generalization of the results and reinforces the idea that this kind of description should occur in different Brazilian regions and populations.

CONCLUSION

The results obtained in this research contribute to broaden the knowledge on socio-demographic, clinical and therapeutic factors, as well as to verify the self-care attitudes of users bearing diabetes mellitus. Thus, the situational diagnosis of the studied population will support the organization, planning and execution of actions focused on the local reality, prevention of comorbidities, recovery and health promotion of these individuals.

Evidence related to the studied variables has clinical relevance for nursing care, suggesting that educational strategies, based on active methodologies, should be fostered in the chronic patient's environment. The multiprofessional team, in Primary Health Care, must pay attention to the specificities of this population, envisaging self-care even in situations of illness limitations.

Furthermore, other studies aiming to identify those bearing diabetes users that have access to health services should be carried out, so that more specific actions regarding prevention and treatment possibilities can be developed.

REFERENCES

1. World Health Organization. Global action plan for the prevention and control of noncommunicable diseases 2013-2020 [Internet]. Geneva: World Health Organization; 2013 [cited 2014 Jan 27]. 55 p. Available from: http://www.who.int/globalcoordination-mechanism/publications/globalaction-plan-ncds-eng.pdf?ua=1
2. Campolina AG. A transição de saúde e as mudanças na expectativa de vida saudável da população idosa: possíveis impactos da prevenção de doenças crônicas. Cad Saúde Pública. 2013. 29(6, p. 1217-29.
3. American Diabetes Association Economic costs of diabetes in the USA in 2012. Diabetes Care. 2013.
4. Sociedade Brasileira de Diabetes (SBD). Tratamento e acompanhamento do Diabetes mellitus – Diretrizes da Sociedade Brasileira de Diabetes. São Paulo: Sociedade Brasileira de Diabetes, 2007. Sociedade Brasileira de Diabetes (SBD). Algoritmo para o tratamento do diabetes tipo 2 -atualização 2011. Posicionamento oficial SBD número 3 – 2011. Available at: http://www.diabetes.org.br/attachments/posicionamento/posicionamento-sbd-n-03-2011.pdf
5. International Diabetes Federation. IDF Diabetes Atlas [Internet]. 6th ed. Brussels: International Diabetes Federation; 2014 [cited 2014 Jan 19]. Available from: http://www.idf.org/diabetesatlas
6. 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.
7. Orem DE. Nursing: Concepts of practice. 6 th ed. St.

Louis: Mosby, 2001.

8. Michels MJ, Coral HC, Sakae TM, Damas TB, Furlanetto LM. Questionário de Atividades de Autocuidado com o Diabetes: tradução, adaptação e valiação das propriedades psicométricas. Arq Bras Endocrinol Metab. 2010;54:644-51.
9. BRASIL. Conselho Nacional de Saúde. Resolução 466/12. Diretrizes e Normas Regulamentadora de Pesquisas envolvendo seres humanos. Brasília: CNS, 2012.
10. Katia OV. Caracterização de pessoas com diabetes em unidades de atenção primária e secundária em relação a fatores desencadeantes do pé diabético. Acta Paul Enferm. 2006;19(3):296-03.
11. Iser BPM, Stopa SR, Chueiri SP. Prevalência de diabetes autorreferido no Brasil: resultados da Pesquisa Nacional de Saúde 2013. Epidemiol. Serv. Saúde. [Internet]. 2015 [citado 2016 agos 26]; 24(2): 305-14. Available at: http://www.scielosp.org/pdf/ress/v24n2/2237-9622-ress-24-02-00305.pdf.
12. Otero ML, Zanetti ML, Teixeira CRS. Características sociodemográficas e clínicas de portadores de diabetes em um serviço de atenção básica à saúde. Rev. Latino-Am. Enfermagem. [internet] 2007 [acesso em: 5 nov 2016];15:3.Available at: http://www.scielo.br/pdf/rlae/v15nspe/pt_08.pdf
13. Ramos VKS, Noronha FMF. Caracterização dos usuários do Hiperdia em uma unidade básica de saúde em um município do Estado do Maranhão. Rev Investig Bioméd. [internet]. 2014 [acesso em: 9 nov 2016];6: 82-91.Available at: file:///C:/Users/jefferson%20henrique/Downloads/60-115-1-SM.pdf
14. Ferreira CLRA, Ferreira MG. Características epidemiológicas de pacientes diabéticos da rede pública de saúde - análise a partir do sistema HiperDia. Arq Bras Endocrinol Metab.[internet].2009[acesso em: 10 nov 2016];53(1).Disponivel em: http://www.scielo.br/pdf/abem/v53n1/v53n1a12.pdf
15. Faria HTG, Vera VS, Xavier ATF, Teixeira CRS, Zanetti ML, Santos MA. Qualidade de vida de pacientes com diabetes mellitus antes e após participação em programa educativo. Rev Esc Enfermagem USP [internet]. 2013 [citado 2016 Agost 04]; 47(2): 348-54. Available at: http://www.scielo.br/pdf/reeusp/v47n2/11.pdf
16. Dias AFG, Vieira MF, Rezende MP, Oshima A, Muller MEW, Santos MEX, Serracarbassa, PD. Perfil epidemiológico e nível de conhecimento de pacientes diabéticos sobre diabetes e retinopatia diabetic. Arq Bras Oftalmol. [internet]. 2010[acesso em: 11 0ut 2016]; 73(5):414-8.Available at: http://www.scielo.br/pdf/abo/v73n5/a05v73n5.pdf
17. Resolução nº 11.347 do Ministério da Saúde, de 27 de setembro (BR)[internet]. Dispõe sobre a distribuição gratuita de medicamentos e materiais necessários à sua aplicação e à monitoração da glicemia capilar aos portadores de diabetes inscritos em programas de educação para diabéticos. Diário Oficial da União. 28 set 2006 [acesso em:10 de novembro de 2016]. Available at: http://www.planalto.gov.br/ccivil_03/_Ato2004-2006/2006/Lei/L11347.htm
18. Coelho, ACM. Autocuidado das pessoas com diabetes mellitus tipo 2 em seguimento ambulatorial [dissertação]. Ribeirão Preto: Universidade de São Paulo, Escola de Enfermagem de Ribeirão Preto; 2013 [citado 2016 Set 20].
19. 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. [internet]. 2012[citado 2016 nov 22];25(2):284-90. Available at: http://www.scielo.br/pdf/ape/v25n2/a20v25n2
20. Gomides DS, Villas-Boas LCG, Coelho CM, Pace AE. Autocuidado das pessoas com diabetes mellitus que possuem complicações em membros inferiores. Acta paul. enferm. 2013; 26(3):289-93.
21. Ferreira GPS, Peters AS, Morra LF, Pinto JK, Silva, AAN. A adesão ao autocuidado influencia parâmetros bioquímicos e antropométricos de pacientes diabéticos tipo 2 atendidos no programa hiperdia do município de Juiz de Fora, Minas Gerais, Brasil Nutr clín diet hosp. 2014; 34(3):10-9.
22. Marques MB, Silva MJ, Coutinho JFV, Lopes MVO. Avaliação da competência de idosos diabéticos para o autocuidado. Rev esc enferm USP. 2013; 47(2): 415-20.

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