Feeding profile of individuals with or without diabetes in a basic health unit of Belo Horizonte – MG

Perfil alimentar de indivíduos com ou sem diabetes em uma unidade básica de saúde de Belo Horizonte – MG

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ABSTRACT

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Introduction: the number of Brazilians with diabetes mellitus (DM) will nearly double over the next 20 years. Thus, it is important to promote life habits that prevent DM and its aggravations. To achieve these goals, identifying similarities and differences in eating habits of individuals with and without DM can help understanding how to deal with the disease, facilitating strategies for the development of adequate nutritional intervention, and understanding the relationship between diet and disease control. **Objective:** to verify that there are differences in feeding profiles of individuals with or without DM, within the framework of basic attention to health. **Methodology:** this was a cross-sectional and descriptive study conducted in partnership between the UFMG and the Belo Horizonte city hall. Data were collected on health conditions, eating habits, impression about own feeding, guidelines on healthy living habits, and which professional provided this information. **Results:** 388 users participated in this study being 47 DM patients. Similar food consumption was observed among individuals, regardless of the occurrence of DM. The doctor was recognized as the sole provider of guidelines by most individuals. In addition, approximately 70% of DM patients consider their feeding habits healthy. **Conclusion:** there are similarities in feeding consumption profiles regardless of DM. Thus, a challenge emerges because there is a need for better actions guiding these patients about healthy living habits, which must be constant, comprehensive, and easy to understand.

Key words: Diabetes Mellitus; Primary Health Care; Nutrition.

RESUMO

Introdução: o número de brasileiros com diabetes mellitus (DM) quase dobrará nos próximos 20 anos. Nesse contexto, é importante promover hábitos de vida que previnam o DM e os seus agravos. Para alcançar tais objetivos, identificar as semelhanças e diferenças nos hábitos alimentares dos indivíduos com e sem DM pode ajudar a compreender como lidam com a doença, facilitar estratégias para o desenvolvimento de adequada intervenção nutricional e compreender a relação da dieta em seu controle. Objetivo: verificar se há diferenças no perfil alimentar de indivíduos com ou sem DM, no âmbito da atenção básica à saúde. Metodologia: estudo transversal e descritivo realizado em parceria entre a UFMG e a prefeitura de Belo Horizonte. Foram coletados dados sobre a condição de saúde, hábitos alimentares, impressão sobre a própria alimentação e orientações sobre hábitos de vida saudáveis e qual o profissional foi provedor dessas informações. Resultados: 388 usuários participaram do estudo, sendo 47 portadores de DM. Verificou-se consumo alimentar semelhante entre indivíduos, independentemente da existência de DM. O médico foi reconhecido como único provedor de orientações pela maioria dos indivíduos. Além disso, cerca de 70% dos pacientes com DM consideram saudável a própria alimentação. Conclusão: apurou-se que há semelhanças nos perfis de consumo alimentar independentemente do DM. Dessa forma, surge um desafio, já que

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são necessárias mais ações que orientem esses pacientes quanto aos hábitos de vida saudáveis e que devem ser constantes, abrangentes e de fácil compreensão.

Palavras-chave: Diabetes Mellitus; Atenção Primária à Saúde; Nutrição.

INTRODUCTION

The World Health Organization (WHO) estimates that the number of Brazilians with diabetes mellitus will go from 7.5 million in the adult population (6%) in 2010 to nearly 13 million (7.8%) in 2030.[1] This growth stems from low physical activity, obesity, urbanization, population growth, and poor eating habits.[2]

One of the biggest problems to control type 2 diabetes mellitus (DM) is its silent evolution, which makes an early diagnosis difficult and restricts effective preventive and therapeutic actions. In addition, the treatment of DM is complex and requires behavioral attitudes that need to be persistent through life; these are related to nutrition, physical activity, glycemic monitoring, and use of medicines.[3] It is assumed that self-care education is the most appropriate strategy for the treatment of these patients.[4]

Food is the modifiable cause in DM and therefore, changes in the lifestyle of patients with DM represent a relevant preventive measure in the context of the Basic Attention to Health (ABS).[5] Dietary modifications, in addition to being important to prevent, control, and prevent diseases, can be used as a strategy for self-care by these patients.[6] Sartorelli and Franco consider that the best knowledge about DM is achieved with nutrition education, which enables the diabetic to conduct his treatment and improve his quality of life.[7] The Ministry of Health attaches the responsibility of promoting healthy eating habits to the ABS, both in diabetics and those at risk of developing this disease, with the aim of promoting better metabolic control, ensure adequate body weight, and monitor the maintenance of safe levels of systemic blood pressure.[4] The guidance provided by health care professionals is essential to the prevention and control of DM in the context of the ABS.

The feeding and nutritional education covered in the context of public health has an important role in the process of transformation, recovery, and promotion of healthy eating habits.[8] The educational process must rescue the experiences and concepts that the diabetic already has, contributing to the construction of his knowledge.[9] Freire[10] states that the strategies of the educational process in health must contemplate the participation of users based on the reconstruction of knowledge, enabling an environment for the exchange of experiences and information among the group's participants and health professionals.

The multidisciplinary communication, through health education activities, allows, in medium and long term, that the diabetic exercises better prevention and control of DM and become qualified for the intervention of the determinants of the health-disease process.[11] Nutritional education, as a strategy, intends to contain the advances in the occurrence of diseases and non-communicable complications (DANT) considering that poor quality eating habits are risk factors for many diseases.[12] The absence of the nutritionist in most health teams in Brazil[13] leads other professionals, inserted in the ABS, to be liable for guiding and advising patients with comorbidities influenced by eating habits, which, thus, demands a prior knowledge on this topic.

The objective of this study was to evaluate the prevalence of self-reported DM and compare the usual food consumption profiles of diabetics and non-diabetics. This information can help understanding how diabetics manage their illness, facilitating strategies for the development of the adequate nutritional intervention, and understanding the role of diet in the control of DM.

PATIENTS AND METHODS

This was an observational, descriptive, and transversal study that resulted from the actions of the Education through Work in Health Program (PET-Health) from UFMG in partnership with the Municipal Health Secretary of Belo Horizonte (SMS-BH).

The study population was composed by patients of both genders, at 20 years of age or more, who were waiting for a consultation or another elective procedure in the UBS of BH, and who agreed to participate in the study after receiving the necessary information and signing a volunteer informed consent. Only DM type 2 patients were included. The sample size calculation was carried out based on the adult and elderly population residing in the areas covered by the studied UBS and prevalence of the main DANTs in the city of Belo Horizonte.[14] The power of 80% and a significance level of 5% were considered for the calculation; the sample size was estimated between 135 and 450 individuals.[15]

The sample was divided into two groups: self-reported diabetics (ADD) and non-reported diabetics (NDD). The data collection was conducted between September and December of 2009. The following information were collected:

- sociodemographic;
- comorbidities;
- feeding habits through a questionnaire of food consumption frequency (QFCA);
- guidance provided by health professionals on the promotion of healthy lifestyle habits;
- the most mentioned professional providing such guidelines;
- recognition of feeding habits as a self-care strategy.

The data were obtained through a semi-structured questionnaire[16] where other variables were also collected, however, not used for the construction of this study.

The self-reporting was used to determine each individual's morbidities. The diagnosis of DM was subsequently confirmed through medical records from the UBS. This study only argued about the number of times certain foods were consumed without estimation of portions or amounts, considerations that often do not apply to large populations, although other studies consider that the QFCA should inquire about consumption of predefined portions in a unit of time.[17,18] This instrument proved to be accessible to the local population.[19] Users were also asked if they received, at some point at UBS, guidelines on healthy lifestyle habits and which professional was the greatest provider. Contents and amount and frequency of guidelines received were not characterized because the proposal was to verify if there were guidelines and their repercussions on the lives of users.

It is expected that patients with ADD consume some high-calorie foods, such as sweets and greasy, less often and receive more guidance about healthy lifestyle habits from the UBS than NDDs. The statistical tests to verify the differences between food consumption reported in the QFCA were conducted between ADD and NDD individuals. The evaluation of the data was performed by the descriptive analysis and application of the Pearson's Chi-square, Student's t-test, and Fisher tests (One-Way ANOVA). The time interval used for the analyzes was weekly. Other intervals were converted in weekly frequencies. The Statistical Package for Social Science (SPSS) program version 17.0 was used for the analysis with the adopted significance level of 5% ($p < 0.05$). The project was approved by the Research Ethics Committee – SMS-BH (CEP-SMSA/PBH) under opinion n° 0037.0.410.203-09A.

RESULTS

A total of 388 users were interviewed, and the major self-reported health problems were hypertension (38.8% of the population) followed by DM type 2 corresponding to 47 individuals (12.2%). The main demographic characteristics of those who did not report as diabetics (NDDs) and those self-reported diabetics (DDAs) are highlighted in Table 1.

Table 1 - The main demographic characteristics among patients who are not declared diabetics (NDD) and self-reported diabetics (ADD) in a UBS

Characteristics	NDD	ADD	p-value
N = 388	341 (87.8%)	47 (12.2%)	0.00
Age (years)	44.41 ± 14.95	56.70 ± 10.76	
Gender			
Female	261 (77.2%)	39 (83.0%)	0.37
Male	77 (22.8%)	8 (17.0%)	
Time studied (years)	8.13 ± 4.34	4.83 ± 2.96	0.00
Monthly income (R$)	1355.83 ± 956.92	1362.80 ± 932.93	0.96

Age proved to be decisive in the prevalence of DM because people between 50 and 70 years old accounted for more than 65% of diabetics (n = 31). In addition, when considering all aged over 60 years, the prevalence of DM was nearly 25%. No discrepancy in sampling distribution according to age was observed in the NDD group because the age group between 18 and 60 years comprised more than 80% of its sample. The average studied time by groups should also be highlighted because NDD individuals had significantly more years being studied than ADDs. Among the diabetic subjects (n = 47), 76% were also hypertensive patients (n = 35).

The meal frequency throughout a day was below the six meals recommended by the Brazilian Society of Diabetes (SBD).[20] ADD individuals have an average of 4.81 ± 1.17 meals a day while NDDs have an even smaller average of 4.17 ± 1.15 meals a day.

Table 2 compares the amounts or frequencies of the average consumption of food per week. To do this, the sample was distributed in two groups according to the condition of self-reported diabetics (ADD) and not

self-reported (NDD). It was assumed that in relation to non-diabetics, diabetics should consume more fruits, vegetables, legumes, and sweetness and restrict the intake of sugar, salt, oil, and high-caloric foods.

Table 2 - Comparison of the amounts or frequencies in consumption of some foods by NDDs and ADDs per week

Amount or frequency per week	NDD	ADD	p-value
Consumption amount (in grams):			
Sugar	15.02 ± 12.98	14.10 ± 11.61	0.654
Salt	17.85 ± 61.39	6.81 ± 36.22	0.081
Oil	19.82 ± 53.67	18.03 ± 49.71	0.829
Frequency of use:			
Greens	7.04 ± 4.75	9.25 ± 4.15	0.003*
Vegetables	7.34 ± 4.77	7.03 ± 4.12	0.687
Fruits	8.82 ± 8.17	12.81 ± 8.07	0.003*
Pasta	2.52 ± 3.89	2.00 ± 2.86	0.477
Cookie (salty or sweet)	5.65 ± 6.53	4.38 ± 4.71	0.239
Filled Cookie	0.84 ± 1.99	0.27 ± 1.15	0.012*
Dessert	2.35 ± 4.95	1.37 ± 3.31	0.236
Sweetener	3.43 ± 7.11	13.01 ± 10.65	0.000*
Sugar-free soft drink	0.50 ± 1.64	1.23 ± 2.44	0.074
Common soft drink	3.72 ± 11.02	0.57 ± 1.34	0.000*
Ice cream	1.02 ± 1.68	0.83 ± 2.62	0.581
Candy and/or Gum	32.89 ± 75.79	16.13 ± 55.92	0.104
Alcoholic beverage	0.57 ± 1.76	0.11 ± 0.43	0.000*
Milk	8.29 ± 7.72	9.74 ± 6.80	0.233
Milk products	4.33 ± 5.10	4.61 ± 5.45	0.742
Eggs	2.12 ± 3.50	1.28 ± 2.49	0.184
Beans	9.84 ± 4.60	10.82 ± 3.76	0.123
Meat (bovine, swine or poultry)	8.62 ± 6.89	8.13 ± 4.80	0.635
Fish	1.08 ± 2.74	0.68 ± 0.80	0.442
Processed meat	1.48 ± 2.50	0.59 ± 1.06	0.000*
Fried foods	2.86 ± 3.86	1.33 ± 2.66	0.005*
Snacks	1.31 ± 3.05	0.29 ± 0.56	0.000*
Chips	0.19 ± 0.65	0.01 ± 0.05	0.000*
Sandwich	0.55 ± 1.08	0.08 ± 0.36	0.000*
Banha de porco	0.82 ± 6.03	0.98 ± 3.53	0.868

* Statistical significance; Confidence interval (CI); Self-reported diabetic (ADD); Not Self-reported diabetic (NDD).

Table 2 shows that the eating habits were similar for most studied foods, i.e., the presence or not of DM did not differentiate feeding habits. However, for some foods, such as common soft drinks, filled cookies, and alcoholic beverages, it has been found that ADD individuals seemed to restrict consumption when compared to NDDs. It was expected that ADD individuals would have a significantly lower intake of foods such as sweets, ice cream, candies, chewing gum, cookies, pasta, lard, and oil, and greater intake of fish. However, this relationship was not observed. Such data allows inferring that self-reported diabetics do not make restrictions on the consumption of these foods, consuming them in a similar way as the population without DM.

In another analysis, a difference in coverage of guidelines provided by health professionals, mainly about the incentive to better feeding habits and engagement in regular physical activity was observed between ADD and NDD individuals because 53.5% of NDDs and 89.5% of diabetics received some of this guidance.

Regardless of whether or not guidelines were provided, the analysis of the perception of self-feeding habits showed that almost 70% of ADDs considered themselves healthy, however, without a significant difference in comparison with the NDD group. Conversely, NDDs tended to value the impact of feeding habits on health more than ADDs.

The investigation about which UBS professional was more involved in providing guidelines about healthy lifestyle habits showed that 81% of ADDs mentioned the doctor in the family health team (ESF) as the sole provider of these guidelines. The nurse and nutritionist (Center for Family Health Support-NASF) were remembered later, each covering 2.4% of ADDs.

DISCUSSION

The high prevalence of diabetes mellitus in the studied population, approximately 12%, corroborates the current exponential growth in the prevalence of this disease, mainly due to higher life expectancy, acquiring epidemic characteristics in various countries, particularly in those in development.[7,21]

Table 1 shows that there are socio-demographic differences between the two groups. The present study selected cases with a wide age range, 18 to 80 years old. It is known that the prevalence of DANTs, as that of DM type 2, increases with aging[22,23], which justifies the highest average age among ADDs. The study also identified that diabetics have less time being studied, on average than NDDs. The low educational level can adversely affect access to information bringing fewer learning opportunities and increasing neglect with self-care.[24]

The increased participation of women in this study is also referred in other studies. The greatest concentration of women using diabetes health services may suggest more concerns in women with their own health and more easy access to services.[25,26] This fact is female-friendly because there is evidence that increased contact with medical services results in increased health protection.[23]

In relation to comorbidities, a high rate of diabetics with hypertension was observed, which is found in other studies about hypertension and DM as often associated clinical conditions[27,28] that exponentially multiply morbidity and mortality. Hypertension is one of the main risk factors for chronic complications in DM.[29]

To learn about the dietary habits of diabetics is essential to trace more effective dietary interventions. Less than six[5,20] meals per day were identified in both ADDs and NDDs. Brito et al. (2009) also identified that the diabetic population keeps a frequency of less than six meals a day.[30] Diabetics, as well as the general population, need to be informed and encouraged to feed more times a day. Meals are suggested to be at least as breakfast, collation, lunch, afternoon snack, dinner, and supper.[20]

Table 2 shows that ADD and NDD individuals do not exhibit a significant difference in feeding habits. DM did not influence the eating habits of these individuals or evidence a low adherence to healthier lifestyles in diabetics. Brito et al. (2009) showed that a portion of DM sustains inadequate diets and about 55% report difficulties in changing eating habits.[30] The idea of dietary restriction and strong temptations caused by ease access to food were recognized as barriers to following a nutritional prescription.[26]

In addition, it was observed that ADD users adopt a controlled consumption for some foods such as sweetened soft drinks and fried foods. It is assumed that guidelines probably focus on some foods over others. The ideal is that guidelines are structured by food groups and with comprehensive and commonplace examples.[12] In addition, studies, in general, are limited to diabetic diets without worrying about the eating pattern of the family, social context, or cultural capital in which diabetics are inserted. Furthermore, the pronounced need to know better about the considerations of the DM patient is understood with respect to treatment, and to know the importance given by the diabetic to the practice of physical exercise and adherence to meal planning.[12] Therefore, more com-

prehensive analysis and guidelines for eating habits in the context of basic care should be promoted.[31]

In this study, the greatest provider of guidelines was the doctor. Although the content of these guidelines had not been analyzed, but only asked if at any time patients had already received some guidance about healthy lifestyle habits including eating and physical activity, it is important to note that all professionals in the ABS should inform and educate DM patients to adopt healthier habits. However, dietary changes should not involve only a one-way transmission of knowledge but guided in the dialog between the scientific and the popular because the subjective aspects are also determinants in the compliance to requirements.[26] The preparation of the entire health team is necessary, expanding not only the knowledge about lifestyles but allowing better fitness, systematization, and consistency in the guidelines to be provided to patients with DM.

In contrast, ADDs report receiving guidelines for healthy lifestyle habits more often than NDDs. This difference can be justified by the increased contact of diabetics with health services, even if health promotion strategies are intended for all users.[32] Despite dietary changes composing the variety of information they receive, NDDs associate their own feeding habits more closely with the general state of health than ADDs. Brito[30] et al., in 2009, showed that the importance attributed to the controlled diet decreased with time since DM diagnosis. Another point of interest is that diabetics can present other clinical conditions such as HAS, which, not only increases contact with health services, but also the volume of guidance with similar care that they receive from health services. Thus, it is important to strengthen the effectiveness of good eating habits to control and prevent diseases in DMs, especially for those diagnosed for a long time.

Guimarães and[33] Takayanagui showed that the dietary guidance to diabetics failed. The initial guidance for DM treatment received was inadequate and subjected to drug treatment, contrary to the current recommendations for the disease,[20] which also seek the adoption of other therapeutic practices such as physical exercise and following individualized feeding plans that often result in changing lifestyles.

Although the study did not use clinical and laboratory methods to characterize individuals as diabetics, the self-reported DM proved to be reliable. All 47 ADD individuals were confirmed as having diabetes through the review of their medical records; one car-

rier had gestational diabetes. Beyond this practicality, the fact of self-reporting as a carrier of a restricting medical condition suggests enhanced adherence to healthier living habits.

CONCLUSION

It was concluded that there are similarities in feeding profiles between diabetics and non-diabetics. The fact that ADD individuals received more guidance about healthy lifestyle habits than NDDs did not differentiate the ADDs' eating habits as expected. This shows low adherence to healthy lifestyle habits or possible miscommunication between health professionals and diabetics. It is important to strengthen the effectiveness of good eating habits in the control and prevention of health complications in DMs, especially for those with a diagnosis for a long time.

Thus, a challenge emerges because there is a need for new strategies for educational interventions based on dialog and understanding about needs and difficulties of each user.

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