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Compliance with the treatment of patients with type 2 Diabetes Mellitus

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Abstract

Control of diabetes mellitus and the prevention of complications involve knowledge and implementation of self-care tasks for the patient. This study aimed to verify adherence to treatment and knowledge about type 2 diabetes, and to identify associations between this s variables and other demographic and clinical social nature. It is cross-sectional study with 35 patients goers nutrition clinic of a hospital. For the collection of information were used data from medical records and interviews with the help of questionnaires. Statistical analyzes were performed using SPSS 17.0 s program. There was high overweight index, knowledge parcial about the disease and differences between the means of adherence to various types of care activities. Factors such as age and gender showed influence self-care behavior. The predominant characteristics mind found in the group analyzed are described in the literature as factors associated with difficulties in developing appropriate actions care and more prone to complications. The awareness of the importance of following a balanced diet and the practice of other self-care activities in DM can act as a tool in preventing the onset of complications and promoting quality of life.

Keywords: Type 2 Diabetes Mellitus. Patient Compliance. Self Care.

Introduction

Diabetes mellitus (DM) is the group of metabolic diseases that are characterized by the onset of hyperglycemia coming defects in insulin secretion, peripheral resistance to his action or both.[1,2] In the long run, constantly elevated blood glucose levels are toxic to the body, stimulating the development of micro and macrovascular damage, which can result in irreversible complications.[2,3]

Control of diabetes mellitus and the prevention of complications involve the awareness and implementation of self-care tasks for the patient. Monitoring the glycemic index of food adequacy, foot care and physical activities include such tasks. This occurs when the patient is well instructed by the health team and when a good professional-patient relationship is built.[4]

As proposed by the World Health Organization,[5] the term "adhesion" related to treatment of diabetes refers to "patient active involvement and volunteering" in dealing with their disease by following a course mutually agreed in treatment and shared responsibility of the patient and health professionals in view of the requirements related to the disease. Through the decision of the patient, adherence to self-care activities is the effective change in behavior adequate for healthy lifestyles.[6]

Disease severity is an element that can encourage greater compliance, but in chronic diseases is estimated that non-adherence exceed 50%, which represents a challenge both for patients and for professionals.[6] In the case of diabetes, the continuous maintenance of the prescribed treatment is difficult to accept because of the need of incorporating various discipline and new habits.[7]

Considering the significant portion of the population affected by type 2 diabetes, as well as its severity and complications, explains the importance monitoring adherence to treatment by this group. This research was with the goal check treatment adherence and knowledge of type 2 DM and identify variables associated with sociodemographic and clinical characteristics.

Methods

This study is transversal and was conducted with patients seen at the Rehabilitation Hospital Ana Carolina Moura Xavier (CHR), located in Curitiba - PR. F hi approved by the Research Ethics Committee in Human Beings of the HC-UFPR and data collection took place in October and November 2013. All patients signed a consent form.

A non-probabilistic sample by convenience composed of patients of both sexes, older than 18 years was adopted. Exclusion criteria were considered individuals who had no diagnosis of type 2 diabetes for at least six months and who had some form of dementia and / or mental confusion and psychiatric disorders.

Interviews were conducted with individuals, in order to obtain data on self-care activities, economic status, level of education and knowledge about the disease. For information on the nutritional status, we used the indicators in the medical records.

Information related to self-care activities with type 2 DM were collected through a validated instrument called Self-Care Activities Questionnaire with Diabetes (QDA) [4]QAD analyzes five aspects of the treatment of diabetes, such as:. Diet, physical activity, use of medication, monitoring blood glucose and foot care, and includes smoking. As a way to assess adherence to appropriate treatment, the answers to the topics covered are the number of days in which the patient exercised the activity in the week preceding the interview.

To outline the economic condition of the research subjects, it used the criterion of Economic Classification Brazil (CCEB).[8] It is an instrument built to define economic groups, which is based on the presence of household items of comfort and family head's level of education. From the score achieved, there is the familiar economic strata and their respective gross monthly household income, namely: A (R$ 9,263), B1 (R$ 5,241); B2 (R$ 2,654), C1 (R$ 1,685); C2 (R$ 1,147); D (R$ 776). The questionnaire aims to classify the population regarding their power consumption of goods and services.[8]

In addition, questions were asked about the time of diagnosis of disease and educational level of each participant. Also a questionnaire was applied in order to check the knowledge about diabetes by the patient, containing ten questions with five alternatives for each item, and only the correct answer. In this instrument, information was addressed on: development of type 2 diabetes; blood glucose and monitoring; food choices; physical exercise in controlling the disease; and life with diabetes. The content was based on the manual developed by the *International Diabetes Center,* translated and adapted by Curitiba Diabetes Center.[9]

The nutritional status diagnoses were extracted directly from the records of the dietary service, which was obtained by measuring weight and height anthropometric scale with consecutive calculation of body mass index (BMI).[10] In cases where it was not possible to assess such measures directly, plow to estimate height of the knee[11] and estimated body weight[12] through the use of inelastic and pliable anthropometric tape. In cases of amputation of limbs, it was also used formula for weight adjustment.[13] This information was collected by dietitians of the service during routine visits and are part of the nutritional assessment protocol of that hospital.

In the statistical analyzes, *Student t* and Mann-Whitney tests were used to compare two means of parametric and non-parametric data, respectively. To compare frequencies, we used the chi-square test. The test Kruskal-Wallis test was performed in confrontation above two means, and the Spearman correlation coefficient was used for the purpose of correlating variables.[14] significance level of analysis was 0.05. The analyzes were performed using SPSS 17.0 software, Windows ® version.[15]

Results

The study sample consisted of 35 patients diagnosed with type 2 diabetes goers Rehabilitation Hospital Outpatient Nutrition Ana Carolina Moura Xavier. General characteristics sample can be seen in Table 1.

Table 1. General characteristics of the sample. Curitiba-PR, 2013.

	TOTAL	Men	Women	
	35 (100%)	23 (65.71%)	12 (34.29%)	
N	Mean (SD)	Mean (SD)	Mean (SD)	*P*
Age (years)	62.9 (± 12.0)	64.6 (± 12.9)	59.8 (± 9.7)	0.10
Diagnosis time (years)	12.8 (± 10.3)	15 (± 11.1)	8.6 (± 7.4)	0.08
Amputation of lower limb	19 (54.3%)	16 (45.71%)	3 (8.57%)	0.01

Disease diagnosis time reported by patients ranged from six months to 40 years. Another important factor to be considered is the high rate of amputations observed in the group: 54.3% of those surveyed patients (n =19) had developed complications with the so-called diabetic foot; of those, a male individual had undergone bilateral amputation (2.86%).

Nutritional status of the subjects in the sample was evaluated according to BMI by gender, comparing men and women, and also by age, separating adults and seniors. Such classifications are shown in Table 2.

Table 2. Nutritional status Classification according to gender and stage of life. Curitiba -PR, 2013.

	EN				*P*
	Slimness (%)	Eutrophic (%)	Overweight (%)	Obesity I (%)	
Men (n = 23)	13.0%	39.1%	43.5%	4.3%	
Women (n = 12	0%	25.0%	58.3%	16.7%	0.06
Total (n = 35)	8.6%	34.3%	48.6%	8.6%	
Adults (n = 13)	0%	15.4%	61.5%	23.1%	
Elderly (n = 22)	13.6%	45.5%	40.9%	-	0.00
Total (n = 35)	8.6%	34.3%	48.6%	8.6%	

The nutritional status of the subjects in the sample was evaluated according to sex, comparing men and women, and also by age, separating adults and the elderly. The ratings are shown in Table 2.

Regarding the purchasing power of the research subjects, it was possible to highlight the economic class B2 as predominant. The level of education in the leading group in question was the elementary school 1 incomplete (40%), which corresponds to the 4th grade students. Following are complete elementary school (17.14%) and completed secondary education (14.29%). In the case of the sample under study, it was noticeable positive correlation moderate and financial condition and education level ($r = 0.446$).[14]

Through the questionnaire that assessed the understanding of type 2 diabetes, we found understanding of patients about their disease. Approaches fats in food, physical exercise in controlling type 2 diabetes, as well as stay healthy with the disease, have performed well, demonstrating certain mastery of patients with such matters. The success rate for these questions ranged from 60 to 71.43%.

The questions about foods that can be used with less restriction in diet, exercise in reducing blood glucose and how to live with diabetes achieved fairly satisfactory results, ranging from 42.86 to 57.14% accuracy. As for the other items did not achieve good results. Most of them show partial understanding of the development of diabetes, causes of hypoglycemia, frequency of self monitoring of glucose and choice of food These issues ranged between 5.71 and 17.14% accuracy.

By the responses provided on the knowledge of the disease, there was no statistically significant difference between men and women ($p = 0.17$). However, it was possible to note that in accordance with the increasing age, there is less knowledge reported by patients (moderate negative correlation – $r = -0.475$). In the sample analyzed, there was no correlation between knowledge about the disease and the variables "renda" and "education". Note that the sample is small, which may have contributed to this result.

By applying the QAD, it was possible to view the execution of some self-care practices involved in managing the disease. On group investigated aspects related to vision and compromised motor skills (because it is a rehabilitation center) were some of the difficulties mentioned by respondents to perform self-care tasks. The results are shown in table 3.

Table 3. Adhesion to the items of the Diabetes Self-Care Activity Questionnaire (QAD). Curitiba-PR, 2013.

Items QAD	Men	Women		Total
	Mean (± SD)	Average (± SD)	*P*	Average (± SD)
Power General				
Healthy Diet Tracking	3.91 (± 2.64)	3.75 (± 2.53)	0.824	3.86 (± 2.57)
Nutritional Guidelines for compliance given by a health professional	2.65 (± 2.66)	3.25 (± 2.56)	0.503	2.86 (± 2.6)
Specific power				
Ingestion of five or more servings of fruits and / or vegetables	3.61 (± 2.45)	3.33 (± 2.35)	0.745	3.51 (± 2.38)
Intake of high-fat foods	3.35 (± 2.48)	3.25 (± 2.6)	0.932	3.31 (± 2.48)
Candy intake	2.0 (± 2.36)	4.25 (± 3.08)	0.049 *	2.77 (± 2.8)
Physical activity				
Engaging in physical activity for at least 30 minutes	1.96 (± 3.13)	0.75 (± 2.05)	0.316	1.54 (± 2.83)
Specific physical exercise	1.26 (± 1.39)	0.92 (± 1.08)	0.523	1.14 (± 1.29)
Blood glucose monitoring				
Rating sugar in the blood	4.22 (± 2.97)	2.42 (± 3.0)	0.091	3.6 (± 3.06)
Rating sugar in the blood the recommended number	2.61 (± 2.69)	1.67 (± 2.23)	0.379	2.29 (± 2.55)

Items QAD	Men	Women		Total
	Mean (± SD)	Average (± SD)	*P*	Average (± SD)
Foot care				
Examination of the feet	6.09 (± 2.35)	5.33 (± 2.74)	0.220	5.82 (± 2.48)
Examination inside shoes before you put them	5.41 (± 2.75)	3.25 (± 3.49)	0.050	4.65 (± 3.16)
Drying of the space between the fingers after washing them	6.45 (± 1.79)	6.17 (± 2.13)	0.541	6.35 (± 1.89)
Medication				
Medication as recommended	6.74 (± 0.86)	6.36 (± 2.11)	0.911	6.62 (± 1.37)
Insulin injections as recommended	6.33 (± 1.61)	5.86 (± 1.95)	0.553	6.16 (± 1.71)
Diabetes indicated number of tablets	7.0 (± 0.0)	6.36 (± 2.11)	0.189	6.77 (± 1.28)

Comparing all items of QAD each other, there was a significant difference between the averages of days of adherence ($p = 0.00$), revealing that some forms of self-care are treated with more importance than others.

The means of adherence to the items relating to general and specific food showed no statistically significant differences when comparing men and women groups, except on the intake of sweets item ($p = 0.049$) as points table 3.

It has been identified a moderate positive correlation ($r = 0.41$) between the segment of healthy diet and ingestion of five or more servings of fruits and / or vegetables when analyzing the entire group, and substantial positive correlation ($r = 0.562$) when analyzed men separately. The healthy diet hereinafter also correlated with lower ingestion of n sample sweets total ($r = -0.366$ - Moderate negative correlation) and then r and women ($r = -0.702$ - Very strong negative correlation).

As for compliance with the nutritional guidelines given by a health professional, there was significant positive correlation ($r = 0.578$) with healthy diet by men, and very strong negative correlation ($r = -0.754$) with consumption of sweets by women. It was identified yet very strong positive correlation ($r = 0.787$) between the age of the sample of women and eating foods high in fat.

Even as an item belonging to the QAD, it was observed that tobacco dependence was declared a minority of participants ($n = 4$; 11.43%), but these showed a considerable average daily cigarette consumption: 8.5 units (± 4.36). Almost half of the participants reported being former smokers ($n = 17$; 48.57%). Of the latter group, you can highlight the great variation in smoking cessation time, four months to 50 years, resulting in an average of 17.9 years (± 14.72) of quitting the addiction. Non-smokers accounted for 40% of the sample ($n = 14$).

Regarding the form of drug treatment, 45.71% ($n = 16$) of the sample declared only make use of oral hypoglycemic agents, and 54.29% ($n = 19$) reported making association between oral hypoglycemic agents and insulin.

Discussion

The sample of this study was mostly made by males, unlike the results found in other publications related to diabetic patients presenting opposite proportion.[16,17]

Regarding the age of the population studied, it obtained average age of approximately 62.9 years (± 12.0). The finding is consistent with the fact that most cases of the disease manifests itself after age 40.[2]

The disease diagnosis time reported by patients ranged from six months to 40 years, and resulted in a higher time average compared to other research.[18,19] However, it is noteworthy that the time of diagnosis may not correspond with the real early development of the disease until the date of questioning. The characteristic metabolic defects of type 2 diabetes can be present from nine to 12 years before diagnosis, and about half the population with diabetes is only diagnosed after the onset of complications.[2,20]

There was a higher rate of amputation in the group (54.3%). The risk of lower extremity amputation is 15 to 40 times higher in diabetic patients as compared sec with the general population.[21] However, it should be considered that the result found is attributable to the fact that this job has been performed in a hospital rehabilitation center, focusing cases of care for people with physical limitations.

According to data extracted from patient charts, it was observed that 57.14% of the sample had m any degree of overweight or obese. Among men and women, there was no significant difference in nutritional status. Already compared adults and seniors, It observed higher prevalence of adults classified overweight, and greater number of elderly individuals in a state of eutrophication. If compared with similar work with people with DM type 2 patients, the group analyzed showed higher proportion of overweight adults, but feature coffee or greater Index situated in elderly normal weight range and meno r index in the overweight range.[18]

For a carrier of the disease, the challenge is a good control of body weight, in order to reduce the risks related to DM. Excess weight can intensify insulin resistance, increase the incidence of acute and chronic complications and increase the risk of co-morbidities associated with excess fat. Therefore, the weight loss is an important therapeutic goal for diabetics. Weight control is associated with better disease control, reduction of risk factors and mitigation of using drugs.[2,2 2]

Taking into account the economic profile of the group, it was observed that family gross income more incident was R $ 2.65 4 (B2) group, followed by the lace of R$ 1.685 (C1) and R$ 1.147 (C2) per month, according to estimates proposed by the CCEB.[8] However, it is possible to highlight the fact that more than half of the sample (54.28%) is concentrated in economic classes C1, C2 and D. These last three classes have similar prevalence to the proposed economic distribution to the population of Curitiba and the metropolitan area as the CCEB.[8]

The leading level of education in this group was the "incomplete primary school", which corresponds to 4th grade students. In this present study, there was correlation between level of education and income. It is necessary to consider such characteristics in diabetic patients because this can exert influence on the conduct of therapy. Low level of education combined with low financial level could harm the treatment with regard to the least access to health services, difficulty understanding across the guidelines received by professionals and also in the development of care appropriate action.[17,19]

With regard to knowledge, insight and meaning that patients have about the problem, it can be highlighted that there is also the influence of other factors, such as age. According to the age, one can observe changes in the representations of the disease, as well as behavioral and psychological changes caused by experiments lifelong. Concomitantly, there are intrinsic biological aging changes.[23] Onthis study, in which most of the participants were classified as elderly, the results obtained in testing can also be influenced by age.

Other individual factors to be mentioned and may also influence the knowledge about the disease are: Motivation, anxiety, confidence in the treatment and ability or inability to conduct therapy.[23]

Despite not having been detected correlations between income and education, when compared with the awarenessof the patients on their disease, assessing these issues is justified by the fact that access to information and understanding about their prognosis result in the individual's ability to perform self-care actions, reflecting a direct way the quality of life.[19]

Regarding the Diabetes Self-Care Activity Questionnaire, on the first part, in which general aspects of food are addressed, one can view divergence between the answers provided by the participants. The concept of "healthy eating", being very comprehensive, can be interpreted in several ways. Many of those interviewed reported being difficult to follow and maintain adequate food for diabetes. The main complaints were related to the restriction of simple carbohydrates and fatty foods, and lack of time to perform a scheduled diet.

Studies produced with diabetic outpatients and were based on the same evaluation tool also describe low adherence to nutritional recommendations.[4,6,18]

For specific questions about food, there was agreement between the claim of following a healthy diet and the consumption of fruits and vegetables, is considered the entire group and among men separately. However, the analysis of drinking sse food group showed unsatisfactory average. According to the *Food Guide for the Brazilian population,* regular consumption of fruits and vegetables is related to obesity prevention and weight maintenance, protection for high blood pressure, stroke, heart disease and hyperlipidemia. The same source also points to the low inclusion of these food on the menu of the population.[24] Deficiencies of micronutrients are usually found in diabetic patients, so a proper diet for diabetes should include daily consumption of two to four potions of fruit (with at least one source of vitamin C) and three to five parts of raw and cooked vegetables.[2]

With reference to the fat intake, the instrument used in research showed the use of food of animal origin, such as red meat, whole dairy products. Based on correlations performed, it was possible to point out that the sample in question, the older women, the higher the consumption of this food group. According to the Guidelines SBEM (Society Brazilian Endocrinology and Metabolism), it is recommended that patients with type 2 diabetes avoid consuming red meat more than twice a week.[25] Complementing this statement, the ADA *(American Diabetes Association)* points out that the reduction in the consumption of red meat and other rich sources of fat can r a positive intervention in the prevention and control of hypertension, as well as of micro and macrovascular complications.[26]

Regarding milk and dairy products, it is worth mentioning the importance of replacing these products from the full form for the poorest form in fat. Skimmed milk and its derivatives should be present in the diet of individuals with type 2 diabetes because they are considered important components of a healthy diet, source of high biological value proteins and also because they have low glycemic index.[2,25,26] Limit cholesterol intake, thanks xed saturates and trans is an important goal in the dietary intake of DM, because such conduct has the purpose reduce cardiovascular risk patients es dess.[2] In this study, to be noted that the average consumption of red meat, milk and whole derivatives showed slightly above proposed.[2,25]

In the item "candy intake," most participants mentioned not eat table sugar, replacing for sweetener, but some respondents reported consuming foods containing sugar in the composition, such as handmade confectionery and processed sweets. In the total sample, f hi observed that s individual followed by more days of the week a healthy diet, consequently ate candy for fewer days. On the women when analyzed individually in addition to the above relation, it was possible to

note that the more days claimed stick r nutritional guidelines, the lower the weekly consumption of sweets. However, when comparad pa Average consumption among both sexes, observ or to an average of candy intake higher for women.

In middle-aged women, consumption of sweets may be associated with a greater sense of well-being than the consumption of low calorie and / or non-sweet foods. Sweet foods with high caloric density can function as a tool in alleviating negative emotions and *stress* and *and*.[27] The simple sugar intake, however, should be of at most 10% of the total caloric intake. Diabetic patients do not need to completely give up the consumption of this food group because isocaloric amounts of sucrose and starch also raise blood glucose. However, they should give preference to other sources of carbohydrates such as vegetables, fruits, legumes and whole grains; and when added to sucrose on the meal plan, this should be adequately covered with insulin or hypoglycemic agents.[2,26] Foods with high sugar content are also related to overweight and obesity.[24]

Eating behavior is conditioned by several factors, such as knowledge, practices and perceptions as much sense as cognitive. Often, notes a skeptical attitude on the part of patients, with respect to evidence and broadcast guidelines, suggesting that the conviction for changing eating habits is not an easy task.[28] Whereas the patients in this study are attended by a team of nutrition and consequently have received guidelines and food plans, it can see that there was still poor adherence to nutritional therapy.

Mean days of the week observed for physical activity were low. It can justify such a result because the sample was collected in a rehabilitation center, and also for the outstanding portion of individuals with amputations. Thus, the great majority of patients had some physical limitation.

In item 3.2, described as "specific physical exercise" were included physiotherapy and occupational therapy activities offered by the institution. However, the average was still considerably low. Compared to other publications prepared on diabetic patients, this study showed less commitment to the habit of performing physical activities.[4,6,18]

As evidenced in the literature, regular physical exercise for type 2 diabetes sufferers are able to increase glucose uptake, with consecutive improvement in glycemic control; reduce glycated hemoglobin, even when there is no reduction of significant weight, and reduce cardiovascular risk.[2,3] The association between dietary changes and physical activity helps to improve metabolic profile, with reduction in LDL-C and triglyceride levels and. increase of HDL-c.[2]

In the absence of contraindications, recommended the practice of moderate-intensity exercise three to five times a week, lasting 30-60 minutes, or 150 minutes of regular activities distributed throughout the week, avoiding staying more than two consecutive days without exercises.[2,3] Based on this statement, we can see that the analyzed group is far from ideal for a good control of DM and prevention d the onset of complications.

The means found for weekly monitoring of blood glucose and frequency recommended by the doctor or nurse also met underwhelming. The reason for the low compliance to this activity can be inferred beyond inconvenience of the procedure, the lack of own glucometer, reported by some patients, and lack of awareness of the importance of this evaluation in controlling the disease.

The glycemic self-monitoring procedure is an effective way for the patient to achieve metabolic control and understand what can cause variation in your blood sugar. It serves as an educational tool, as a transgression or suppressing the dietary recommendations may result in hyper- or hypoglycemia. Despite its importance, there are numerous reasons why patients do not follow such activity, highlighting themselves to inconvenience of the method and high cost as the main. The risks of hypoglycemia and weight gain are the most relevant, so adherence to lifestyle changes, including increased frequency of blood glucose monitoring, can minimize these risks.[2,29]

The self-monitoring also means viewing and active patient participation in treatment. So, it may make the necessary adjustments in order to maintain an adequate metabolic control and reduce the likelihood of complications.[5]

The item that dealt with the foot care showed large membership, according to reports of respondents. The means found were better, compared with similar studies.[4,18] Large proportion of participants who had suffered an amputation referred pay more attention to the remaining foot, due to the trauma experienced and the fear of losing the other end.

The diabetic foot is a common complication, coming from preventable factors and significant impact on patients with diabetes. Understanding the patient about the severity of the problem and carry out self-care actions can be crucial in preventing or delaying the onset of adverse outcomes. The foot care is configured as a simple attitude and promoting quality of life.[3,21] The risk of ulcers and amputations is higher in individuals with a previous history of amputation and / or ulcers; peripheral vascular disease; poor glycemic control and smoking.[3]

The self-care activity with the highest average number of days of membership nest and study the follow-up of drug therapy. As well as the results obtained here, other authors describe greater adherence to the use of drugs and lower adherence to other activities.[16,30]

Publications suggest that the follow-up of drug treatment often has greater compliance because it is simpler to be fulfilled. The change in risk behaviors, such as physical inactivity and inadequate eating habits, for example, is considered more complex because it involves incorporating new habits and thus often has a lower adhesion.[7,16,30]

Much of the analyzed sample reported not being a smoker on the interview, but you can highlight that a significant portion has already made use of cigarettes above and, among the interviewees, some still had dependents smoke.

Smoking is directly linked to poor control of diabetes. It is known as a cardiometabolic risk factor sense also important factor in onset and progression of peripheral arterial disease, in which the severity of disease is directly proportional to the quantity and cigarette consumption time. Also associated with the risk of stroke, the onset and complications of hypertension and nephropathic progression. Measures such as the interruption of smoking habit help control the DM, since smoking cessation can improve the lipid profile, lower blood pressure, reduce the chances of emergence of micro and macrovascular problems and play an important role in preventing other complications.[2, 3]

Conclusion

The adhesion must not be conceived as a single process but multi-dimensional because the patient s may adhere satisfactorily to an aspect of the therapeutic regime and not to adhere to others. According to the data obtained in this study, it was found that the sample studied had low grip on issues related to the disease itself. No association between economic status and education with knowledge about the disease and adherence to treatment variables was noted. It was possible to highlight the presence of significant difference between the averages found for adherence to the various types of self-care activities.

Factors such as age and sex showed influence self-care behavior. Age was negatively correlated with the knowledge of the disease in the group and, among women, with negative eating sweets and positively with fat intake. But when comparing men and women habits, there was a higher average number of days of consumption of sweets by women. In contrast, those who reported follow a healthy diet and stick r dietary guidelines given by a health professional had agreements with a lower consumption of sweets. The group of men had a positive association between healthy diet tracking compliance with dietary guidelines, and the consumption of fruits and / or vegetables.

Before such exposures, we can say that the awareness of the importance of following a balanced diet and the practice of other self-care activities in DM can act as a tool in preventing the onset of complications and promoting quality of life. Because food match an indispensable component in the treatment of diabetes and health, it is essential to emphasize the relevance of adopting nutritionally adequate practices.

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