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SELF CARE ON DIABETES OF USERS IN A PRIMARY HEALTH CARE SYSTEM

AUTOCUIDADO EM DIABETES POR USUÁRIOS DE UM SERVIÇO DE ATENÇÃO PRIMÁRIA

AUTOCUIDADO DE LA DIABETES POR USUARIOS DE UNSERVICIO DE ATENCIÓN PRIMARIA

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ABSTRACT

The aim was to identify the engagement of people with diabetes mellitus in self-care activities. A cross-section al descriptive study was carried out with 42 people with diabetes who attended the health education and promotion project for diabetic sand hypertensive patients at a family clinic in Rio de Janeiro. The data revealed a good level of self-care in patients, especially in medication management and foot care activities. However, the domain that corresponded to physical activity and the item to measure blood glucose received less ad herence. Such results serve as subsidies for the organization, planning and execution of interprofessional actions aimed at the promotion and health education of diabetics.

Keywords: *Self-care; Diabetes mellitus; Self-management.*

RESUMO

O objetivo do estudo foi identificar o engajamento de pessoas com diabetes mellitus em atividades de autocuidado. Foi realizado um estudo descritivo transversal, com 42 pessoas com diabetes que frequentavam o projeto de educação e promoção em saúde aos diabéticos e hipertensos em uma clínica da família no Rio de Janeiro. Os dados revelaram um bom nível de autocuidado nos pacientes, especialmente nas atividades de gerenciamento medicamentoso e cuidado com os pés. No entanto, o domínio que corresponde à atividade física e o item de avaliar o açúcar no sangue receberam menores adesões. Tais resultados servem de subsídios para a organização, planejamento e execução de ações interprofissionais voltadas à promoção e educação em saúde dos diabéticos.

Palavras-Chave: *Autocuidado; Diabetes mellitus; Autogestão.*

RESUMEN

El objetivo del estúdio fue identificar la participación de las personas con diabetes mellitus em las actividades de autocuidado. Se realizóun estúdio descriptivo transversal con 42 personas con diabetes que asistieron al proyecto de educación y promoción de lasalud para diabéticos e hipertensos en una clínica familiar em Río de Janeiro. Los datosrevelaronunbuennivel de autocuidado enlos pacientes, especialmente enel manejo de medicamentos y actividades de cuidado de los pies. Sin embargo, eldominio que corresponde ala actividad física y elítem para evaluare la zúcaren sangre recibieron menos adherencia. Dichos resultados sirven como subsidios para laorganización, planificación y ejecución de acciones interprofesionales dirigidas a lapromoción y educación para lasalud de los diabéticos.

Palabras Clave: *Autocuidado; Diabetes mellitus; Automanejo.*

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JAN. MAR. (2022) VOL. 16 Nº.1

INTRODUCTION

Diabetes mellitus (DM) is a relevant public health problem and currently affects, in Brazil, an approximate number of 16 million people between 20 and 79 years old, with prospective studies to increase this health condition. Additionally, diabetes has a relevant economic impact on countries and on health systems, resulting from greater use of these services, loss of productivity and long-term care required to treat this chronic disease and its possible comorbidities[1].

Among the most prevalent complications are cardiovascular diseases, neuropathy, nephropathy and retinopathy, with potential to reduce functionality, quality of life and increase the mortality rate. However, patient adherence to treatment is an essential factor for controlling diabetes and preventing complications[2].

In treatment, several health promotion strategies must be incorporated into the daily lives of people with diabetes, in which a continuing education program focused on self-care is highlighted2. Interprofessional actions should be included, including drug management, the adoption of healthy eating, regular physical activity, skin care (especially with the feet), moderation in the use of alcohol and smoking cessation, in order to promote changes for a healthier lifestyle and greater control of this health condition[3,4].

The success of the treatment depends on a professional team that actively involves the diabetic person (and their family) in the construction of the care plan, showing the individual that they are co-responsible for their treatment and that knowledge of the health condition reflects their commitment to the managing your health[4]. In this context, this research sought to identify the engagement of people with diabetes mellitus in self-care activities.

METHODS

A descriptive cross-sectional study with a quantitative approach was carried out. Forty-two diabetic or pre-diabetic people who attended the health education and promotion project for diabetics and hypertensive patients in a family clinic in the west side of Rio de Janeiro participated in this study. Only hypertensive patients were excluded from the research.

For data collection, the sociodemographic questionnaire was applied to characterize the sample and the Diabetes Self-Care Activities Questionnaire (QAD) to identify adherence to treatment through the level of engagement in self-care activities. This questionnaire is the translated, adapted and validated version for the Brazilian context of the Summaryof Diabetes Self-CareActivities Questionnaire[5].

The QAD is a standardized instrument composed of 18 items that assess seven dimensions: general diet, specific diet, physical activity, blood glucose monitoring, foot care, medication management and smoking habits. When responding, participants highlighted the frequency with which each item was performed in the last week, with responses ranging from zero to seven days, where the highest frequency is associated with habits that can control diabetes and modify the course of the disease. Only two questions - intake of high-fat foods and intake of sweets - need to have their results weighted, as the lower the frequency, the better self-care and treatment adherence[8]. During the application of the questionnaire, the researchers informed the participant that, if in the last seven days he had been feeling ill, he should think about the answers considering the most recent week without the presence of illness[5].

Data collection was carried out in two formats: in person at the family clinic before the new coronavirus pandemic (SARS-CoV-2) and through telephone contact with users who were away from the primary care service, due to restrictive measures for physical detachment imposed by the pandemic. For data analysis, descriptive statistics

10.54620/cadesp.v16i1.513
JAN. MAR. (2022) VOL. 16 Nº.1

were used, including central tendency (mean) and dispersion (standard deviation and error) indices, as well as frequency.

With regard to ethical considerations, the research was approved by the Research Ethics Committee, as well as by the Municipal Health Department of Rio de Janeiro - SMS/RJ, under the opinions of CEP-IFRJ nº 3.785.722 and CEP-SMS/RJ No. 3,908,547. Participants signed an informed consent form to raise awareness of the research objectives. To ensure anonymity and confidentiality of information, individuals were given a coding number.

RESULTS

To characterize the sample, table 1 was constructed, which shows the distribution of sociodemographic variables of the 42 research participants.

Table 1 - Sociodemographic variables of participants with Diabetes Mellitus

Variables	Category	N	%
Gender			
	Male	8	19,05
	Famale	34	80,95
Age			
	Old man	22	52,38
	Adult	20	47,62
Marital Status			
	Singles	11	26,19
	Married	17	40,48
	Widower	10	23,81
	Divorced	4	9,52
Schooling			
	No education	5	11,90
	Incomplete elementary school	17	40,48
	Complete primary education	8	19,05
	Complete high school	8	19,05
	Graduation incomplete	2	4,76
	Full graduation	2	4,76
Ocupação			
	Retired	20	47,62
	Pensioner	5	11,90
	Worker	8	19,05
	Domestic worker	8	19,05
	Unemployed	1	2,38
Total		42	100

Source – Own elaboration, 2021.

Most respondents were female (80.95%), married and retired, followed by workers or housewives. With regard to education, most participants had incomplete primary education (40.48%), followed by complete primary and secondary (19.05%). Of the comorbidities presented, the participants reported having mostly systemic arterial hypertension and rheumatic diseases. Within the sample, six people were pre-diabetic, one was type 1 diabetic and 35 were type 2 diabetic. Among them, 15 were insulin.

In evaluating the adherence of participants to self-care activities investigated by the QAD, the frequencies with their average adherence per weekday and their respective deviations and standard errors are shown in table 2.

Table 2. Diabetes Self-Care Activities Questionnaire (DAQ) in the studied sample (n=42)

Items	Variables	Average ±	DP	EP
1.1	Followed a healthy diet	5,29	2,52	0,39
1.2	Followed the dietary guidance	4,29	3,06	0,47
2.1	Ingested five or more servings of fruit and/or vegetables	4,79	2,61	0,40
2.2	Avoided eating foods rich in fat	3,24	2,80	0,43
2.3	Avoided eating sweet foods	4,86	2,19	0,34
3.1	Practiced activity for at least 30 minutes	2,36	2,44	0,38
3.2	Practiced specific physical exercise	1,38	2,13	0,33
4.1	Assess blood sugar	2,69	3,11	0,48
4.2	Assess blood sugar the recommended number of times	5,33	2,89	0,75
5.1	Examined the feet	6,02	2,28	0,35
5.2	Examined inside the shoes before putting them on	4,82	3,12	0,48
5.3	Dried the spaces between the toes after washing them	5,88	2,54	0,39
6.1	You took the diabetes medications as instructed	6,90	0,48	0,07
6.2	Took insulin injections as directed.	6,40	1,68	0,43

10.54620/cadesp.v16i1.513
JAN. MAR. (2022) VOL. 16 Nº.1

6.3	Took the indicated number of diabetes pills	6,74	1,17	0,18

Source – Own elaboration, 2021.

The self-care questionnaire showed that the greatest adherence to treatment was given by medication management according to the guidance prescribed by health professionals, whether for oral use or insulin. Next, self-care in examining and drying the spaces between the toes to avoid cracks or other complications, as well as evaluating blood sugar the recommended number of times for insulin and following a healthy diet, especially avoiding sweets, were the others activities in which the participants most adhered. In turn, the lowest adherence was in the physical activity domain, followed by the item "to assess blood sugar" in general.

When analyzing smoking habits, a significant number of people who had never smoked (n=23) or ex-smokers (n=16) stands out. Only three people reported having smoked in the last week, ranging from 1 to 10 cigarettes per day.

The standardized assessment instrument used allowed to portray the individual's adherence to their care plan, by identifying the level of engagement of people with diabetes in self-care activities, in addition to identifying indicators that can be better managed in continuing health education programs.

DISCUSSION

Engaging in different self-care activities is necessary for the adoption of a lifestyle that is adequate for the control of diabetes mellitus. This fact reveals that the care plan must be designed in a collaborative way between professionals who seek to promote health and prevent disabilities. Furthermore, treatment success is associated with considering the diabetic person as an active subject and co-responsible for their self-care[4].

The research sample pointed to a greater participation of women with low education and without smoking habits. The prevalence of this chronic disease is higher in women[6], and the literature still informs that this gender is the one that most seeks health services[7], which may explain the higher quantity in this research. There was a balance in the number of diabetics in relation to age groups , with a discrete greater participation of elderly people. Data on education and age presented by the participants corroborate the epidemiological data on diabetes mellitus1,[8]. Research still reports a positive correlation between the level of education and adherence to the therapeutic regimen[9], as well as those who have the highest level of education find it easier to adhere to the practice of physical activities[10].

Positively, most respondents did not have the habit of smoking, which acts as a protective factor for the health condition, since smoking is a risk factor for the development of diabetic neuropathy (with an increased chance of amputations) and cardiovascular diseases[11].

In analyzing the data, the survey results found greater adherence to medication management. These findings were also found in the studies by Boas et al[12] and Broadbentet al[13]. In health care, incorporating drug treatment into the diabetic patient's routine seems to be the most traditional and simple self-care activity to be performed, since many lifestyle changes are not required[14,15]. However, the scientific literature is quite clear in informing that the control of this chronic disease will only be effective if there is a change in behavior, integrating other healthy habits into their daily lives[16].

Similarly, the participants in this research also demonstrated good adherence with regard to foot care. The proper management of the diabetic foot includes keeping the region between the toes dry, the nails with close cuts and checking for the presence of mycoses and fissures[17]. It is a health education strategy widely publicized in primary care, as it is linked to the prevention of ulcerations and possible partial or total amputations of the foot[17], especially in diabetics with loss of protective sensation (due to neuropathy) or peripheral arterial disease[18]. These complications are associated with increased morbidity and mortality and high

10.54620/cadesp.v16i1.513
JAN. MAR. (2022) VOL. 16 Nº.1

financial costs for health systems[19]. Furthermore, the presence of deficiency in the structures of the lower limbs can lead to limitations in carrying out daily activities that require standing or mobility, in addition to having the potential to restrict social participation[20].

Survey participants who were insulin also had satisfactory adherence to the "blood sugar analysis as per the recommendations of healthcare professionals." Insulin is an effective therapeutic strategy for improving the quality of life of users who depend on this drug. Assessing capillary blood glucose, in addition to enabling immediate monitoring of metabolic control, supports decision-making in health care, in case the measured values are outside the desired standards[21].

With regard to self-care related to food, many participants reported avoiding eating sweets and foods rich in fat, as these products raise the glycemic index and increase the risk of developing or aggravating cardiovascular complications[22]. The results are similar to the studies by Santos et al[5] and Eid et al[23]. It is interesting to point out that, although many participants declared to follow a healthy diet, this adherence is lower when questioning whether the user follows the nutritional guidance prescribed by health professionals. Such discrepancy between results may be due to a lack of information or understanding about what would be the "ideal" nutrition for people with diabetes. Giving guidance on avoiding industrialized and processed products, foods with refined sugars or very fatty foods, without considering the context and environment of the diabetic, will hardly result in changes in the behavior of these people[24].

Scientific evidence indicates that there is no universal nutritional plan that works for the entire population of people with diabetes[25]. Adopting healthier eating habits is a consequence of prior knowledge of personal and cultural preferences that involve food choices, associated with an understanding of the financial power to purchase healthier products and the family's ability to act as a facilitator for changes that will generate better glycemic control and reduce the risk for comorbidities[4,25].

Worryingly, the group of research participants revealed low adherence to the practice of physical activity. The same occurred in the study by Felix et al[26], carried out with patients with diabetes (type 1 and 2) who had a maximum frequency of twice a week to perform physical exercise. It is necessary to return to the fact that the group of participants had a low level of education and this, in part, can justify the low adherence to the practice of physical activities, as studies point to positive associations between the two variables[10].

It is known that dietary patterns and regular physical activity of moderate intensity (150 minutes per week) are the habits that most contribute to the metabolic control of diabetes, to prevent cardiovascular disease and even to reduce the use of insulin[14] and incidence of type 21 diabetes. In addition to promoting improvements in quality of life and acting to reduce weight and cholesterol, exercising regularly reduces glycated hemoglobin and fasting plasma glucose levels[27].

A caveat must be made for this result in the search. Some collections (n=25) were made in the context of the new coronavirus pandemic (SARS-CoV-2). As previously informed and here again, the questionnaire used (QAD) considers the frequency of adherence to self-care in its last week. Thus, the low frequency to perform physical activities may be due to the restrictive distance measures suggested by the Ministry of Health[28], especially considering that many of the participants were elderly, that is, they constituted a risk group for the Covid- 19. In this sense, future research - post-pandemic - would be interesting to understand the real influence of the social context on the regular practice of physical activities.

Caution must also be exercised in interpreting the results on the general data of "assessing blood sugar". All participants (insulin or not) answered this question in the questionnaire and the low adherence to this self-care practice may be due to the lack of medical recommendation to perform

10.54620/cadesp.v16i1.513
JAN. MAR. (2022) VOL. 16 Nº.1

this procedure frequently and systematically for those who are not insulin. which generated an average of less than 3 days a week. Such data corroborate the study by Neto et al[29]. As mentioned above, when only those insulin that received guidance for evaluation were analyzed, the adherence rate was satisfactory.

There is also a significant number of users (n=27) who do not have the device at home, as the blood glucose meter and blood glucose tapes are only provided by the Unified Health System to those who are insulin (which does not correspond to most of this sample, n=15). In addition to the data, the fact that many participants (insulin or not) performed this activity in the Family Clinic and, thus, this practice may have been reduced by the temporary suspension of weekly monitoring of these people for the duration of the coronavirus pandemic. However, the importance of using technologies to monitor blood glucose is undeniable, as they inform immediate results about body functions and contribute to decision-making in favor of better health care[30].

The limitations of this study are due to the sample size and the fact that it was restricted to the group of users who participated in a health education and promotion program for diabetes and hypertension that took place in a Family Clinic. Thus, the data cannot be generalized. In addition, the methodological strategy adopted (cross-sectional study) does not allow for cause-and-effect associations, and it is important to conduct longitudinal research to better understand the adherence of people with diabetes to self-care activities over time. However, the results presented in this study highlight the importance of a multidimensional approach to the construction of a care plan, as well as providing indications of the dimensions of self-care that still need to be worked on to obtain effective and resolute results for the control of diabetes.

CONSIDERAÇÕES FINAIS

Users who participated in this study showed a good level of self-care, especially with regard to medication management and foot care. However, the domain corresponding to physical activity and the item to assess blood sugar need to be better investigated, considering the social, temporal and personal context, in order to define the most appropriate strategies for the care plan for people with diabetes. The results obtained in this study serve as subsidies for the organization, planning and execution of interprofessional actions aimed at promoting and educating diabetics in health.

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REFERENCES

1. Sociedade Brasileira de Diabetes. Diretrizes da Sociedade Brasileira de Diabetes 2019-2020. São Paulo (SP): Clannad; 2020.
2. Lu Y, Xu J, Zhao W, et al. Measuring self-care in personswithtype 2 diabetes: A systematic Rev.Eval Health Prof[Internet] 2016; 39(2):131-84. Disponível em: https://pubmed.ncbi.nlm.nih.gov/26130465/.
3. Oliveira CF, Arruda GMMS, Melo ALA, Barcelos AC. Cuidado interprofissional aos portadores de Hipertensão e Diabetes em um grupo de intervenção educacional e terapêutica. CadEspCeará. 2016; 10(2): 33-45. Disponível em:https://cadernos.esp.ce.gov.br/index.php/cadernos/article/view/105/112.
4. Ferreira CM, Soares EP, Carvalho GB, Silva AC. Intervenção educacional como ferramenta de gestão aos diabéticos.CadEsp Ceará. 2020; 14(1): 111 -114. Disponível em: https://cadernos.esp.ce.gov.br/index.php/cadernos/article/view/290/205.
5. Santos SD, Rocha MR, Moura Ionara H, et al. Atividade de autocuidado em pessoas com diabetes mellitus tipo 2. RevEnfermUFPE online [Internet]. 2019; 13:1-8. Disponível em:https://pesquisa.bvsalud.org/portal/resource/pt/biblio-1050782.
6. Silva DS, Laterza MC, Moreira OC, et al. Prevalência de diabetes mellitus em indivíduos atendidos pela estratégia saúde da família no município de Ubá-MG. RevBrasAtivFis e Saúde [Internet]. 2012; 17(3):195-199. Disponível em: https://rbafs.org.br/RBAFS/article/view/ 1858/1698
7. Gomes R, Nascimento EF, Araújo FC. Por que os homens buscam menos os serviços de saúde do que as mulheres? As explicações de homens com baixa escolaridade e homens com ensino superior. CadSaúde Pública [Internet]. 2007; 23(3):565-574. Disponível em:http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0102-311X2007000300015&lng=en.
8. Flor LS, Campos MR. Prevalência de diabetes mellitus e fatores associados na população adulta brasileira: evidências de um inquérito de base populacional. RevBrasEpid[Internet]. 2017; 20(1):16-29. Disponível em:http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1415-790X2017000100016&lng=en.
9. Carvalho AZFHT, Andrade JU, Lima TM, et al. Adesão ao regime terapêutico de pacientes com diabetes mellitus: análise de atividades de autocuidado. Braz. J. ofDevelop[Internet]. 2020; 6(7): 48115-48129. Disponível em: file:///C:/Users/Lilian%20Dias/Desktop/13405-34775-1-PB.pdf.
10. Streb AR, Leonel LS, Silva CS, et al. Associação entre a prática de atividade física em diferentes domínios e o uso de insulina em adultos e idosos com diabetes no Brasil. Ciênc Saúde Col [Internet]. 2020; 25(11): 4615-4622. Disponível em: https://www.scielosp.org/pdf/csc/2020.v25n11/4615-4622/pt.
11. Boell JEW, Silva DMGV, Guanilo MEE, et al. Resiliência e autocuidado em pessoas com diabetes mellitus. Texto Contexto – Enferm[Internet]. 2020; 29:e20180105. Disponível em: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0104-07072020000100327&lng=en
12. Villas-Boas LCG, Foss MC, Freitas MCF, et al. Relação entre suporte social, adesão ao tratamento e controle metabólico de pacientes com diabetes mellitus. RevLatino-Am. Enfermagem [Internet]. 2012; 20(1):52-58. Disponível em:http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0104-11692012000100008&lng=en.
13. Broadbent E, Donkin L, Stroh JC. Illnessandtreatmentperceptions are associatedwithadherencetomedications, diet, andexercise in diabeticpatients. Diabetes Care [Internet]. 2011; 34(2):338-40. Disponível em:https://pubmed.ncbi.nlm.nih.gov/21270191/.
14. Trevizani FA, Doreto DT, Lima GS, et al. Atividades de autocuidado, variáveis sociodemográficas, tratamento e sintomas depressivos em idosos com diabetes mellitus. Rev. Bras. Enferm. [Internet]. 2019; 72 (2):22-29. Disponível em:http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0034-71672019000800022&lng=en.
15. Faria HTG, Rodrigues FFL, Zanetti ML, et al. Fatores associados à adesão ao tratamento de pacientes com diabetes mellitus. Acta Paul Enferm[Internet]. 2013; 26(3):231-237. Disponível em:http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0103-21002013000300005&lng=en.
16. Gabbay RA, Durdock K. Strategiestoincreaseadherencethrough diabetes technology. J Diabetes SciTechnol [Internet]. 2010; 4(3):661-5. Disponível em:https://pubmed.ncbi.nlm.nih.gov/20513334/.
17. Perdomo CR, Romero AP, Vélez MR. Conhecimentos e práticas para a prevenção do pé diabético. Rev Gaúcha Enferm [Internet]. 2019; 40:e20180161. Disponível em:http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1983-14472019000100408&lng=en.
18. Schaper NC, van Netten JJ, Alpelqvist J, et al. Practicalguidelinesonthepreventionand management ofdiabeticfootdisease. Diabetes Metab Res Rev [Internet]. 2020; 36(1);e3266. Disponível em:https://pesquisa.bvsalud.org/controlecancer/resource/pt/mdl-32176447.
19. Eleftheriadou I, Samakidou G, Tentolouris A, et al. Nonpharmacological management ofdiabeticfootulcers: anupdate. Int. J. LowExtremWounds [Internet] 2020; 19:15347346209663561. Disponível em:https://pubmed.ncbi.nlm.nih.gov/33073653/.
20. Foong HF, Kyaw BM, Upton Z, et al. Facilitatorsandbarriersofusing digital technology for the management ofdiabeticfootulcers: A qualitativesystematicreview. IntWound J [Internet]. 2020; 17:1266-1281. Disponível em: https://pubmed.ncbi.nlm.nih.gov/32390305/.
21. Maia FFR, Araújo LR. Impacto do sistema de monitorização contínua da glicose em pacientes diabéticos. RevAssocMedBras[Internet]. 2006; 52(6): 395-400. Disponível em: https://www.scielo.br/pdf/ramb/v52n6/a17v52n6.pdf.
22. Lira MCA, de Souza NMM, Burgos MGPA. Prevalência de fatores de risco para doenças cardiovasculares em diabéticas. NutrClín Diet Hosp [Internet]. 2017; 37(1):75-81. Disponível em:https://revista.nutricion.org/PDF/mayaramenezes.pdf.
23. Eid LP, Leopoldino SAD, Oller GASAO, et al. Fatores relacionados às atividades de autocuidado de pacientes com diabetes mellitus tipo 2. EscAnna Nery [Internet]. 2018; 22(4):e20180046. Disponível em: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1414-81452018000400201&lng=en.

10.54620/cadesp.v16i1.513
JAN. MAR. (2022) VOL. 16 Nº.1

24. Pereira J, Frizon E. Adesão ao tratamento nutricional de portadores de diabetes mellitus tipo 2: uma revisão bibliográfica. RevAssocBras Nutri [Internet]. 2018; 8(2):58-66. Disponível em:https://www.rasbran.com.br/rasbran/article/view/330.
25. Evert AB, Boucher JL, Cypress M, et al. Nutritiontherapyrecommendations for the management ofadultswith diabetes. Diabetes Care [Internet]. 2013; 36(11):3821-42. Disponível em:https://pubmed.ncbi.nlm.nih.gov/24107659/.
26. Felix LG, Lemos LGH, Negreiros RV, et al. Adesão às práticas de autocuidado entre pessoas idosas com diabetes mellitus. Anais IV CIEH [Internet]. 2015; 2(1): 1-7. Disponível em:http://editorarealize.com.br/artigo/visualizar/12017.
27. Loureiro LAR, Afonentão MIV, Ribeiro OS, et al. Exercício físico em pessoa com diabetes: revisão sistemática de literatura. RevPortEnferReabi [Internet]. 2019 jun; 2(1):19-26. Disponível em:https://www.researchgate.net/publication/334095829_Exercicio_fisico_em_pessoas_com_diabetes_revisao_sistematica_de_literatura.
28. Ministério da Saúde (BR). Portaria nº 454, de 20 de março de 2020. Declara, em todo o território nacional, o estado de transmissão comunitária do coronavírus (covid-19). Diário Oficial da União. 2020 Mar. 20.
29. Neto JDM, Santos-de-Araújo AD, Santana TCFS, et al. Adesão dos pacientes de diabetes mellitus às atividades de autocuidado. RevInvestBiom[Internet]. 2018; 10(2):132-14. Disponível em: https://www.researchgate.net/publication/332459001_Adesao_dos_pacientes_de_diabetes_mellitus_as_atividades_de_autocuidado.
30. Bernardes MS, Santana C da S. Health monitoringanddecision-makingbyolderadults. Gerontechnology [Internet]. 2018; 17(4):238-244. Disponível em:http://dx.doi.org/10.4017/gt.2018.17.4.005.00.