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Original article

# Adherence to self-care actions among people with diabetes in primary health care

Adesão às ações de autocuidado de pessoas com diabetes na atenção primária à saúde

*Adhesión a las acciones de autocuidado de personas con diabetes en la atención primaria de salud*

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## Abstract

**Objective**: To analyze adherence to self-care actions among people with diabetes. **Method**: This descriptive, cross-sectional study was conducted in two Primary Health Units in the capital of a Brazilian state in the Central-West region, selected by convenience sampling. Data were collected between March and June 2023 using a Sociodemographic Characterization Questionnaire and the Diabetes Self-Care Activities Questionnaire. Descriptive and bivariate analyses were conducted, with Spearman's correlation used at a 5% significance level. **Results**: The self-care actions with the highest adherence rates included reducing sweet consumption, checking shoes before wearing them, drying between toes after washing feet, and adhering to medication. **Conclusion**: Collective actions and individual guidance for people with diabetes must go beyond a biomedical focus, addressing lifestyle behaviors. Behavioral changes in people with diabetes should be thoroughly integrated into the training of health professionals.
**Descriptors:** Self-Care; Diabetes Mellitus; Chronic Disease; Primary Health Care; Nursing

## Resumo

**Objetivo:** analisar a adesão às ações de autocuidado de pessoas com diabetes. **Método:** estudo descritivo, transversal, em duas Unidades Básicas de Saúde de uma capital da região Centro-Oeste brasileira, selecionadas por conveniência. Dados coletados entre março a junho de 2023 com o Questionário de caracterização sociodemográfica e o Questionário de Atividades do Autocuidado com o diabetes. A análise foi descritiva e bivariada. Utilizou-se a correlação de Spearman, com nível de significância de 5%. **Resultados:** a média de adesão às ações de autocuidado com maior frequência foram: redução de consumo de doces, examinar os calçados antes de colocá-los, à secagem entre os dedos após lavar os pés e o uso da medicação. **Conclusão:** ações coletivas e orientações individuais às pessoas com diabetes necessitam explorar os comportamentos de vida, além do foco biomédico. A mudança de comportamento de pessoas com diabetes deve ser amplamente discutida na formação dos profissionais de saúde.

**Descritores:** Autocuidado; Diabetes Mellitus; Doença Crônica; Atenção Primária à Saúde; Enfermagem

## Resumen

**Objetivo**: analizar la adhesión a las acciones de autocuidado en personas con diabetes. **Método**: estudio descriptivo y transversal realizado en dos Unidades Básicas de Salud de una capital de la región Centro-Oeste de Brasil, seleccionadas por conveniencia. Los datos fueron recolectados entre marzo y junio de 2023 mediante el Cuestionario de Caracterización Sociodemográfica y el Cuestionario de Actividades de Autocuidado en Diabetes. El análisis fue descriptivo y bivariado. Se utilizó la correlación de Spearman, con un nivel de significancia del 5%. **Resultados**: las acciones de autocuidado con mayor frecuencia de adhesión promedio fueron la reducción en el consumo de dulces, la inspección del calzado antes de ponérselo, el secado entre los dedos después de lavar los pies y el uso de la medicación. **Conclusión**: las acciones colectivas y las orientaciones individuales dirigidas a personas con diabetes deben abordar los comportamientos de vida más allá del enfoque biomédico. El cambio de comportamiento en personas con diabetes debe ser ampliamente discutido en la formación de los profesionales de la salud.
**Descriptores**: Autocuidado; Diabetes Mellitus; Enfermedad Crónica; Atención Primaria de Salud; Enfermería

## Introduction

Diabetes mellitus (DM), regarded as a growing epidemic, is increasingly prevalent due to lifestyle habits such as sedentary behavior, excessive weight, population growth, aging, and longer survival among individuals diagnosed with the condition.[1] As a chronic condition, diabetes can lead to microvascular and macrovascular complications affecting target organs like the heart, blood vessels, eyes, kidneys, and brain.[2]

Non-adherence or difficulties with self-care actions can contribute negatively to delayed complications, hospitalizations, premature deaths, decreased quality of life, and an economic burden on the healthcare system and family functioning.[3] In response, surveillance of chronic conditions, especially by professionals in Primary Health Care (APS in Portuguese), highlights the need for individuals to actively engage with their health to maintain quality of life and prevent complications.[4]

It is important to emphasize that DM is a condition sensitive to Primary Health Care (CSAP in Portuguese), and disease prevention and complication management can be developed by a multidisciplinary health team within PHC, positively influencing early diagnosis and individual management of this condition. Therefore, adherence to self-care actions and active involvement in their health, alongside medication adherence, are essential for people with DM.[5]

Although healthy lifestyle habits, such as a balanced diet and regular physical activity, reduce morbidity and mortality among people with diabetes and decrease cardiovascular complications, behavioral change is a complex process influenced by various psychosocial factors. Continuous monitoring by healthcare professionals and self-care support can promote quality of life and reduce harm.[6]

The Chronic Care Model (MACC in Portuguese) offers an alternative to overcoming care fragmentation, with the fundamental premise that healthcare professionals support individuals with chronic conditions in engaging with self-care actions.[3] Thus, care actions should encourage people with DM to make informed health decisions and adopt healthier habits; health education that emphasizes empowerment for DM self-care is advised.[7]

Supported self-care (SC) relies on a structured approach in which the health professional provides support to help individuals recognize their chronic condition, reflect on their behaviors and lifestyle, identify needs, set goals, and monitor their care plan.[8-9]

Self-care practices involve a continuous process of healthy behaviors, with individuals actively engaged in managing their condition. Such behaviors include healthy dietary patterns, self-monitoring of blood glucose, foot care, exercise, and adherence to prescribed medications (such as insulin and oral antidiabetics).[10] However, studies indicate low adherence among people with chronic conditions to physical exercise, healthy eating, and blood glucose monitoring.[11-12]

Given that the absence or insufficiency of these practices may impair the effectiveness of diabetes management, the following aims was to analyze adherence to self-care actions in people with diabetes.

## Methods

This was a quantitative, descriptive, cross-sectional study linked to a matrix project funded by the Foundation for Support of Education, Science, and Technology Development in Mato Grosso do Sul. It was designed based on the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) research report.

The study was conducted in the capital of a state in Brazil's Central-West region, which at the time of the study comprised seven health districts, 11 Basic Health Units (BHU), and 63 Family Health Units. Participants included individuals with DM registered at two BHU facilities, one with 505 and the other with 897 registered diabetes patients, selected by convenience sampling.

Initially, the primary researchers of the matrix project established in-person contact with the teams from both BHU facilities to request a list of registered individuals with DM. Inclusion criteria for the study were as follows: individuals with type 2 diabetes (DM2) of any gender, aged 18 years or older, residing within the BHU coverage area, and participants of the matrix project. Individuals with verbal comprehension issues that would hinder or prevent communication were excluded from the study.

Participation invitations were extended through active recruitment of registered individuals with DM via home visits, accompanied by a community health agent, telephone contact, and participation in the Hypertension and Diabetes Program (HIPERDIA in Portuguese) at the selected health units.

Data collection took place from March to June 2023 through interviews averaging 30 minutes. A questionnaire was used to collect sociodemographic data (gender, age, marital status, years of education, occupation, and years since diagnosis), along with the Diabetes Self-Care Activities Questionnaire (DSCA)[13]. This questionnaire is a validated tool adapted for use in Brazil from the Summary of Diabetes Self-Care Activities Measure (SDSCA),[13] which evaluates adherence to self-care behaviors over the past seven days. It consists of 15 items covering general and specific dietary habits, physical activity, blood glucose monitoring, foot care, medication adherence, and smoking.

Each item is rated on a scale from 0 to 7, with 0 representing the least favorable condition and 7 the most favorable. For items related to "consumption of high-fat foods" and "consumption of sweets," scores were reversed, with 0 representing the most favorable condition and 7 the least. For the smoking variable, participants were classified as smokers or non-smokers, with the analysis focused on the proportion of smokers and the average number of cigarettes consumed per day.[13]

Data were tabulated in Excel 2016 and subjected to descriptive analysis using mean, median, and standard deviation. For bivariate analysis, Spearman's correlation was used according to data distribution, with a significance level of 5%. Self-care adherence was considered favorable when the average frequency was at least five days per week, except for the items "fat consumption" and "sweet consumption," where values were reversed.[14]

After agreeing to participate in the study, the ethical principles and research objectives, including data confidentiality and reliability, were explained to the participants. This information was conveyed through the reading and signing of the Informed Consent Form (ICF) in duplicate. The study adhered to the ethical guidelines of Resolutions No. 466/12, 510/2016, and 580/2018 of the Brazilian National Health Council for research involving human subjects, and was approved by the Human Research Ethics Committee of the Federal University of Mato Grosso do Sul, under opinion no. 4.321.389.

## Results

A total of 57 individuals with DM2 participated in the study, with an average diagnosis duration of nine years (Table 1).

**Table 1 –** Sociodemographic profile of individuals with DM2 registered in primary health care, Campo Grande, MS, 2023

| Variable | Nº (%) |
|---|---|
| **Age** | |
| 20-59 years | 19 (33.3) |
| ≥ 60 years | 38 (66.7) |
| **Gender** | |
| Female | 39 (68.4) |
| Male | 18 (31.6) |
| **Mariage status** | |
| Single | 08 (14.0) |
| Married/Stable Union | 31 (54.4) |
| Widowed/Separated | 18 (31.6) |
| **Ocupation** | |
| Retired | 25 (43.9) |
| Homemaker | 19 (33.3) |
| Others | 13 (22.8) |
| **Education** | |
| Illiterate | 04 (7.0) |
| Incomplete Primary School | 30 (52.6) |
| Completed Elementary Education | 10 (17.5) |
| Incomplete Secondary Education | 03 (5.3) |
| Completed Secondary Education | 09 (15.8) |
| Completed Higher Education | 01 (1.8) |

Analysis of average adherence to self-care actions revealed the highest frequencies in reducing sweet consumption, checking shoes before wearing them, drying between the toes after washing the feet, and medication adherence.

In contrast, healthy dietary habits (such as following a dietary plan or consuming fruits and vegetables), physical exercise, blood glucose monitoring, and insulin use were less frequent (Table 2).

**Table 2 –** Adherence to items on the Diabetes Self-Care Activities Questionnaire, Campo Grande, MS, 2023

| DSAQ Itens | Adherence Average (± SD |
|---|---|
| 1.1 Follow a healthy diet | 4.49 (± 2.58) |
| 1.2 Follow dietary recommendations | 1.89 (± 2.46) |
| 2.1 Consume five or more servings of fruits and vegetables | 3.67 (± 2.83) |
| 2.2 Consume high-fat foods | 4.77 (± 2.16) |
| 2.3 Consume sweets | 1.53 (± 2.03) |
| 3.1 Engage in at least 30 minutes of daily physical activity | 2.02 (± 2.37) |
| 3.2 Engage in specific physical exercises (walking, swimming, etc.) | 1.40 (± 2.20) |
| 4.1 Monitor blood glucose | 1.96 (± 2.51) |
| 4.2 Monitor blood glucose as recommended | 1.88 (± 2.78) |
| 5.1 Inspect feet | 3.46 (± 3.16) |
| 5.2 Check inside shoes before putting them on | 5.09 (± 2.80) |
| 5.3 Dry between the toes after washing feet | 5.19 (± 2.73) |
| 6.1 Take diabetes medications as recommended | 6.21 (± 1.79) |
| 6.2 Take insulin injections as recommended | 1.74 (± 2.99) |
| 6.3 Take the prescribed number of diabetes pills | 6.00 (± 1.81) |

* Standard Deviation (SD)

Regarding smoking habits, five participants reported being smokers, with cigarette consumption ranging from three to 20 per day (average of 11.8), while 52 participants indicated they do not smoke, including 15 former smokers.

In bivariate analysis, variables showing statistically significant associations included education level and the frequency of "fruit and vegetable consumption" (p=0.050); age group and the practice of "drying between the toes after washing feet"

(p=0.036); and duration of diagnosis with adherence to oral medication treatment ("taking diabetes medication as recommended") (p= 0.056) and injectable treatment ("taking insulin injections as recommended") (p=0.010).

## Discussion

The results of the present study indicated that participants' average adherence to self-care was closer to the least favorable condition possible. According to the measurement instrument, the closer the rating is to seven, the more favorable the adherence. The predominance of female participants in this study may be related to the higher use of healthcare services by this demographic. This can be attributed to men's lower propensity to seek regular healthcare or recognize their health conditions in the absence of physical symptoms.[15]

Participants showed a low level of education (incomplete primary education), reflecting the socioeconomic context of limited access to less-processed foods for many individuals.[16]

The most frequently performed self-care actions observed in this study align with results from a study conducted in the Northeast region of Brazil, where a reduction in sweets consumption, along with practices like drying between the toes after washing feet, checking inside shoes before putting them on, and taking medication were reported five to seven days per week.[17]

The findings regarding sweets consumption revealed an average of 1.53 days per week, which is considered satisfactory compared to a study conducted in Southeastern Brazil, where the average sweets intake was 5.45 days per week.[12] Changing eating habits, especially reducing sweets and carbohydrates, remains a significant challenge for people with diabetes, as these foods are sources of energy and pleasure.

Regarding adherence to foot self-care actions, the findings of this study were more favorable than those of a study conducted in Southern Brazil, where the weekly adherence averages were 3.44 days for "foot inspection," 2.69 days for "checking inside shoes," and 5.11 days for "drying between toes".[18]

The importance of foot self-care actions lies in the early identification of skin and/or circulatory changes and in preventing injuries. Thus, foot self-examination should be encouraged in health education activities, group sessions, and nursing consultations to foster individual autonomy regarding health. However, assessment indicators for foot care by healthcare teams remain a challenge, as this practice is not yet incorporated into the routine diabetes care in all services and often focuses solely on the biomedical model.[19]

In terms of adherence to oral and injectable medication therapy, the results of this study were similar to those from a study conducted in a rural area of Minas Gerais, which reported average adherence of 6.42 and 6.28 days per week, respectively.[20] This result underscores the importance individuals attribute to medication compared to adherence to healthy lifestyle habits.

Additionally, the government's free medication distribution policy, which guarantees access to these supplies, the ease of medication administration, and healthcare professionals' guidance - often adopting a traditional curative model focused on the biomedical paradigm, with a perception that medication is more effective for glycemic control than diet and exercise - may influence this result.[17,21-22]

Lower adherence to self-care actions involving behavioral changes (healthy eating habits, physical exercise, and blood glucose monitoring) was also observed in a study conducted in Southeastern Brazil.[16] These findings highlight the need for healthcare professionals in primary care to plan strategies that help individuals with diabetes reflect on their health behaviors, identify risks, and find ways to make informed, healthy choices.

The low adherence to dietary guidance among participants in this study (averaging 1.89 days per week), while influenced by social determinants, should be seen by healthcare teams as a target for intervention. Providing guidance with language tailored to the target audience and considering individuals' living conditions can positively influence adherence.

Following a dietary plan designed by healthcare professionals that includes selecting quality foods, meal frequency, and controlling the intake of fats, carbohydrates, and dairy products is essential for effectively managing this chronic condition.[23]

The regular consumption of fruits and vegetables is a key component of a balanced and healthy diet due to their high content of vitamins, minerals, and fiber, which help reduce cholesterol absorption, promote prolonged satiety, and contribute to glycemic control.[13] However, various factors, such as limited access to healthy foods[24], low family income, and an urban lifestyle characterized by a lack of physical activity, can lead to insulin resistance.[25]

Regarding low adherence to physical activity (averaging two days per week), it is worth noting that more than half of the participants in this study were older adults, which may influence these results due to reduced functional capacity, including balance, mobility, and muscle strength - factors that can limit regular physical activity.[26] Furthermore, socioeconomic issues and a lack of knowledge about the benefits of exercise may serve as barriers to adopting a regular exercise routine.[21]

Low adherence to blood glucose monitoring among people with diabetes has been reported in another study conducted in a municipality in the state of Rio Grande do Sul.[27] When offering guidance on self-care to people with diabetes, primary care professionals need to emphasize the importance of tracking glycemic levels to raise individual awareness and commitment to self-care. Factors such as access to glucometers and the skill to perform the test should also be considered.

The low adherence to recommended insulin use highlights the need to investigate possible causes, such as visual impairments affecting dose measurement and the misconception that the absence of physical symptoms justifies omitting the prescribed dose.

The results of this study indicate that adherence to self-care actions shows an unsatisfactory average when considering weekly adherence. Given this, future studies that can identify the primary factors contributing to low adherence, as well as those that allow testing strategies to encourage self-care and skill development, are necessary.

It is worth noting that, at the time of the study, medication shortages may have limited the results. However, identifying the self-care actions with the lowest adherence among individuals provides a basis for planning actions that encourage discussions about behavior and lifestyle habits, both among people with diabetes and among healthcare professionals who need to seek intervention tools to foster change.

## Conclusion

Collective actions and individual guidance provided to people with diabetes must explore behaviors and lifestyle habits beyond the biomedical focus. Behavioral change in people with diabetes should be thoroughly discussed during the training of healthcare professionals. Similarly, developing skills among primary care professionals to support individuals with diabetes in performing self-care actions is an urgent matter to be addressed in continuing education activities.

## References

1. Lima HS, Gama JAG, Pelanda EG, Nóbrega RVA, Gonçalves SC, Firmino PA, et al. Rastreamento de fatores de risco para diabetes tipo 2 em acadêmicos de medicina. Núcl Conhecimento. 2020;20(11):93-107. doi: 10.32749/nucleodoconhecimento.com.br/saude/academicos-de-medicina.

2. Malta DC, Bernal RTI, Sá ACMGN, Silva TMR, Iser BPM, Duncan BB, et al. Diabetes autorreferido e fatores associados na população adulta brasileira: Pesquisa Nacional de Saúde, 2019. Ciênc Saúde Colet. 2022;27:2643-53. doi: 10.1590/1413-81232022277.02572022.

3. Theis LC, Moraes TP, Moysés ST. Evaluation of care for people living with Diabetes Mellitus according to the Care Model for Chronic Conditions. Res Soc Dev. 2021;10(8):e0810817014. doi: 10.33448/rsd-v10i8.17014.

4. Schönholzer TE, Zacharias FCM, Amaral GG, Fabriz LA, Silva BS, Pinto IC. Indicadores de desempeño de la Atención Primaria del Programa Previne Brasil. Rev Latinoam Enferm. 2023;31. doi: 10.1590/1518-8345.6640.4007.

5. Freitas JS, Chaves MMN, Lourenço RG. Internações de adolescentes por condições sensíveis à atenção primária à saúde na perspectiva da integralidade. Esc Anna Nery. 2023;27:e20220138. doi: 10.1590/2177-9465-EAN-2022-0138pt.

6. Ministério da Saúde, Secretaria de Atenção à Saúde, Departamento de Atenção Básica (BR). Estratégias para o cuidado da pessoa com doença crônica: diabetes mellitus. Brasília (DF): Ministério da Saúde, Secretaria de Atenção à Saúde, Departamento de Atenção Básica; 2013.

7. Arruda GO, Marcon SS, Aveiro HEP, Haddad MCFL, Kalinke LP, Fonseca GS, et al. Efeitos do autocuidado apoiado por enfermeiros em homens com Diabetes Mellitus Tipo 2. Rev Baiana Enferm. 2021;36. doi: 10.18471/rbe.v36.43380.

8. Moraes JCO, Bezerra SMMS. Efeitos do autocuidado apoiado sobre o perfil pressórico e cardiometabólico de hipertensos: ensaio clínico randomizado. Cogitare Enferm. 2022;27:1-14. doi: 10.5380/ce.v27i0.82868.

9. Bezerra KMG, Borba AKOT, Marques APO, Carvalho QGS, Santos AHS, Cavalcanti BRVS. Conocimiento y autoeficacia en personas con Diabetes Mellitus tipo 2. Enferm Glob. 2023;22(3):68-109. doi: 10.6018/eglobal.553591.

10. Hasan AA, Ismail A, Noor H. The influence of social support on self-care behavior among T2DM patients. SAGE Open Nurs. 2024 Jan 03;10:23779608231219137. doi: 10.1177/23779608231219137.

11. Tavares VB, Farias AL, Silva ASA, Sousa JS, Silva HP, Bastos MSCBO, et al. Amazon Amandaba - Sociodemographic factors, health literacy, biochemical parameters, and self-care as predictors in patients with type 2 diabetes mellitus: a cross-sectional study. Int J Environ Res Public Health. 2023;20(4):3082. doi: 10.3390/ijerph20043082.

12. Santos PT, Pereira RC, Nakamura PM, Moura RF. Factors that interfer with adhesion to the treatment of Diabetes Mellitus type 2. Res Soc Dev. 2022;11(1). doi: 10.33448/rsd-v11i1.24861.

13. Michels MJ, Coral MHC, Sakae TM, Damas TB, Furlanetto LM. Questionário de atividades de autocuidado com o diabetes: tradução, adaptação e avaliação das propriedades psicométricas. Arq Bras Endocrinol Metab. 2010;54(7):644-51. doi: 10.1590/S0004-27302010000700009.

14. Costa CG, Luz CRA. Avaliação de indivíduos diabéticos quanto ao autocuidado e ao estágio de mudança de comportamento segundo o modelo transteórico, na Atenção Primária à Saúde do Distrito Federal. Brasília Méd. 2022;59(1):1-12. doi: 10.5935/2236-5117.2022v59a270.

15. Moura NS, Lopes BB, Teixeira JJD, Oriá MOB, Vieira NFC, Guedes MVC. Literacy in health and self-care in people with type 2 diabetes mellitus. Rev Bras Enferm. 2019;72(3):700-6. doi: 10.1590/0034-7167-2018-0291.

16. Farinha FT, Oliveira BND, Santos SFC, Souza WR, Rozera APR, Trettene AS. Atividades de autocuidado em pacientes com Diabetes Mellitus tipo 2: estudo transversal. Rev Enferm UERJ. 2020;28:e52728. doi: 10.12957/reuerj.2020.52728.

17. Calixto AVD, Ferreira MA, Souza JV, Andrade JIA, Lira RC. Adesão ao autocuidado no tratamento dos pacientes diabéticos na Unidade Básica de Saúde de Cajazeiras-PB. Saúde (Santa Maria). 2021;47(1). doi: 10.5902/2236583453344.

18. Volpato AB, Dario MJC, Dimer LM, Dario AJS, Tuon L, Nunes RZS. Análise da prevalência e dos fatores de risco associados à amputação por Diabetes Mellitus. Braz J Health. 2022;5(6):24156-73. doi: 10.34119/bjhrv5n6-182.

19. Fernandes FCGM, Santos EGO, Morais JFG, Medeiros LMF, Barbosa IR. O cuidado com os pés e a prevenção da úlcera em pacientes diabéticos no Brasil. Cad Saúde Colet. 2020;28(2):302-10. doi: 10.1590/1414-462X202028020258.

20. Silva RO, Gonçalves BC, Pereira ICS, Carvalho LC. Application of the Diabetes Self-Care Activities Questionnaire (SDSCA) during the COVID-19 pandemic. Res Soc Dev. 2022;11(15). 10.33448/rsd-v11i15.37004.

21. Frazão MCLO, Viana LRC, Ferreira GRS, Pimenta CJL, Silva CRR, Madruga KMA, et al. Correlação entre sintomas de depressão, atitude e autocuidado em idosos com diabetes tipo 2. Rev Bras Enferm. 2023;76(3):e20220741. doi: 10.1590/0034-7167-2022-0741pt.

22. Costa PA, Oliveira Neta MS, Azevedo TF, Cavalcanti, LT, Rocha SRS, Nogueira MF. Emotional distress and adherence to self-care activities in older adults with diabetes mellitus. Rev Rene. 2022;23:e72264. doi: 10.15253/2175-6783.20222372264.

23. Trevizani FA, Doreto DT, Lima GS, Marques S. Atividades de autocuidado, variáveis sociodemográficas, tratamento e sintomas depressivos entre idosos com Diabetes Mellitus. Rev Bras Enferm. 2019;72(2):27-34. doi: 10.1590/0034-7167-2017-0579.

24. Boell JEW, Silva DMGV, Guanilo MEE, Hegadoren K, Meirelles BHS, Suplici SR. Resilience and self-care in people with diabetes mellitus. Texto Contexto Enferm. 2020;29. doi: 10.1590/1980-265X-TCE-2018-0105.

25. Yang HJ, Kim MJ, Hur HJ, Jang DJ, Lee BK, Kim MS, et al. Inverse association of the adequacy and balance scores in the modified healthy eating index with Type 2 Diabetes in women. Nutrients. 2023;15(7):1741. doi: 10.3390/nu15071741.

26. Nobre L. Knowledge of elderly diabetics about diabetes: characterization, associated factors and impact on self-care. J Aging Innov [Internet]. 2021 [cited 2024 Nov 10];10(1):108-25. Available from: https://journalofagingandinnovation.org/wp-content/uploads/7JAIV10E1-1.pdf.

27. Moreschi C, Rempel C, Backes DS, Pissaia LF, Oliveira SS, Goulart GS, et al. Adesão às atividades de autocuidado pessoal com diabetes. Res Soc Dev. 2022;11(4):e55511427712. doi: 10.33448/rsd-v11i4.27712.

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