PHARMACEUTICAL INTERVENTION IN THE TREATMENT OF ELDERLY DIABETIC PATIENTS: CONTRIBUTIONS TO EDUCATION AND SELF-CARE

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Abstract

This article addresses pharmaceutical intervention in the treatment of elderly diabetic patients, highlighting its importance for treatment adherence and self-care. Diabetes mellitus is a chronic disease with high prevalence among older adults, who face challenges such as polypharmacy and inappropriate medication use. The general objective of the research is to analyze how the pharmacist's professional guidance influences adherence to drug therapy. The methodology used involves a bibliographic review and qualitative analysis of pharmaceutical practices. The expected results indicate that pharmaceutical interventions can significantly improve treatment adherence and patients' quality of life, while also promoting self-care habits. The final considerations emphasize the need for continuous training of pharmacy professionals to deal with the complexities of caring for elderly diabetic patients, in addition to suggesting the implementation of educational strategies aimed at overcoming barriers to treatment adherence. This study contributes to the development of a more patient-centered approach, resulting in benefits for public health and the quality of life of the elderly population.

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INTRODUCTION

Diabetes mellitus is one of the most relevant chronic non-communicable diseases today, presenting high prevalence and a significant impact on morbidity and mortality, especially among the elderly population. This condition is characterized by alterations in the production or action of insulin, resulting in hyperglycemia and increasing the risk of cardiovascular, renal, and infectious complications (Prado; Francisco; Barros, 2016).

In Brazil, there has been a continuous increase in the number of older adults diagnosed with diabetes, a phenomenon associated with rising life expectancy and demographic changes. Although aging does not, in itself, represent illness, it is related to greater vulnerability to the development of chronic diseases, such as diabetes mellitus, which requires constant monitoring and multiprofessional interventions (Prado; Francisco; Barros, 2016).

The complexity of therapy in this population involves both the use of medications and self-care practices. However, polypharmacy, cognitive limitations, and drug interactions make adherence to treatment more difficult, which may compromise clinical outcomes. In light of this, the research problem arises: in what way can pharmaceutical intervention favor glycemic control in elderly diabetic patients and reduce associated complications (De Melo et al., 2019).

The justification for this study is based on the importance of pharmaceutical practice within the healthcare team. Through clinical follow-up, the pharmacist can identify risks, provide guidance on the correct use of medications, and encourage self-care practices, such as a balanced diet and glycemic monitoring. This performance contributes to treatment adherence and the prevention of complications (Camacho; De Carvalho; Marini, 2023).

The general objective of this article is to analyze the relevance of pharmaceutical intervention in the treatment of older adults with diabetes mellitus. As specific objectives, it seeks to understand the main challenges faced by this population, highlight the pharmacist's contribution to the prevention of complications, and discuss self-care strategies that promote quality of life.

Thus, it is expected that this study will contribute to highlighting the importance of the pharmacist in the care of elderly patients with diabetes. The proposal is to show that this professional's role goes beyond the dispensing of medications, encompassing health education, therapeutic monitoring, and the promotion of patient autonomy in managing their chronic condition.

DEVELOPMENT

METHODOLOGY

This research is characterized as a bibliographic review of a qualitative and descriptive nature, with the objective of analyzing the importance of pharmaceutical intervention in the treatment of elderly diabetic patients, highlighting the impact of professional guidance on self-care and adherence to drug therapy. This method does not involve hypotheses and is not exploratory, systematic, experimental, quantitative, or a case study, being limited to the critical analysis of the existing literature.

The search for relevant materials will be conducted in the Google Scholar and SciELO databases, encompassing publications from the last ten years. Articles and books published in Portuguese and English that specifically address the role of the pharmacist in the context of diabetes mellitus in elderly patients, as well as the relationship between pharmaceutical intervention, self-care, and treatment adherence, will be considered for inclusion. On the other hand, review articles, abstracts, editorials, first impressions, and works that do not present empirical data or are not directly related to the proposed theme will be excluded.

The keywords used in the search will be: "pharmaceutical intervention," "diabetes mellitus," "older adults," "self-care," "treatment adherence," and "professional guidance." The literature review will

make it possible to consolidate the existing knowledge regarding the pharmacist's role in improving therapeutic adherence and self-care among elderly diabetic patients, contributing to the theoretical foundation of this work.

RESULTS AND DISCUSSION

Population aging has significantly transformed the health profile in Brazil and around the world, requiring adjustments in the organization of services and in the planning of public policies focused on elderly care. According to the Brazilian Institute of Geography and Statistics (IBGE, 2022), it is estimated that, by 2030, the elderly population will outnumber children and adolescents, reflecting the ongoing demographic and epidemiological transition. This phenomenon leads to an increase in the incidence of chronic non-communicable diseases (CNCDs), among which type 2 diabetes mellitus (T2DM) stands out due to its impact on morbidity and mortality and on healthcare costs (Rodrigues et al., 2020). Data from the World Health Organization (WHO, 2021) indicate that T2DM already affects more than 460 million people worldwide, approximately 20% of whom are over 65 years of age, making the disease a public health priority.

The physiological changes inherent to aging directly influence the pharmacokinetics and pharmacodynamics of medications, altering the processes of absorption, distribution, metabolism, and excretion. This increases the vulnerability of older adults to adverse events and heightens the risks associated with the inappropriate use of pharmacotherapy. In addition, the frequent presence of comorbidities in this age group leads to the phenomenon of polypharmacy, characterized by the simultaneous use of five or more medications. This situation, common among elderly diabetic patients with hypertension, dyslipidemia, and cardiovascular diseases, may compromise treatment adherence, increase the risk of drug interactions, and contribute to preventable hospitalizations (Costa et al., 2020). The literature shows that approximately 40% of older adults using polypharmacy present at least one drug-related problem (DRP), highlighting the need for closer clinical follow-up.

In the context of T2DM, the challenges to maintaining adequate glycemic control are broad and multifactorial. The prevalence of the disease increases with age and is aggravated by behavioral and socioeconomic factors, such as physical inactivity, inadequate diet, low educational attainment, and difficulties in accessing health services (Brazilian Diabetes Society, 2022). Another concerning factor is late diagnosis, which favors the onset of microvascular complications (retinopathy, nephropathy, and neuropathy) and macrovascular complications (coronary artery disease, stroke, and peripheral vascular disease), compromising quality of life and increasing the need for specialized follow-up (Oliveira et al., 2019). In Brazil, it is estimated that nearly half of older adults with T2DM are unaware of their diagnosis, which contributes to the high rate of associated complications.

In addition to clinical aspects, functional and cognitive aspects also affect diabetes management in older adults. Motor and visual limitations make the correct administration of medications and the measurement of capillary blood glucose more difficult, compromising treatment monitoring. Likewise, cognitive deficits, depression, and a limited perception of the seriousness of the disease may reduce therapeutic adherence and engagement in self-care measures (Gonçalves & Sachett, 2019). It is common for older adults to confuse medication schedules, omit insulin doses, or make inappropriate use of oral hypoglycemic agents, which reinforces the need for continuous follow-up by healthcare professionals.

In light of this scenario, health education emerges as a central tool for overcoming barriers related to diabetes management. The promotion of educational actions enables greater understanding of the pathology, encourages the adoption of healthier lifestyle habits, and fosters the patient's active participation in the care process. Diabetes education programs involving lectures, practical workshops, and home follow-up have shown a positive impact on adherence and on the reduction of complications (Tanqueiro, 2015). The use of methodologies adapted to the cognitive and sensory limitations of older adults, such as illustrated booklets, accessible language, and audiovisual resources, enhances the effectiveness of educational actions.

Pharmaceutical intervention, in this context, stands out due to its role in clinical follow-up and in the optimization of pharmacotherapy. Personalized guidance regarding dosage, administration schedules, correct insulin application techniques, recognition of signs of hypoglycemia and hyperglycemia, in addition to explanations about possible adverse effects, has proven effective in reducing medication-related errors (Bonifácio, 2013). Ferreira Júnior and Batista (2018) emphasize that the pharmacist's presence alongside the elderly patient broadens the perception of safety and strengthens the relationship of trust, promoting greater engagement in treatment. Moreover, the pharmacist may assist in organizing the therapeutic regimen by suggesting the use of medication organizers or simplified schedules that facilitate adherence.

Another relevant aspect is the management of polypharmacy. In many cases, elderly diabetic patients use medications for hypertension, dyslipidemia, and other concomitant chronic conditions, increasing the risk of therapeutic duplication and harmful drug interactions. Periodic review of prescriptions by the pharmacist makes it possible to detect and correct flaws, in addition to simplifying complex therapeutic regimens, thereby favoring adherence and preventing hospitalizations related to adverse events (Costa et al., 2020). This preventive action is essential to avoid severe outcomes such as falls, mental confusion, and severe hypoglycemia, which are frequent causes of hospital admission among older adults.

Despite the benefits evidenced in the literature, significant obstacles remain. Low educational and socioeconomic levels limit the understanding of technical guidance, while difficulty in regular access to health services restricts continued follow-up. Resistance to changing lifestyle habits, especially among older adults with a long history of unhealthy behaviors, represents another important barrier (Souza et al., 2023). In this sense, the participation of family members and caregivers is indispensable, since they are often directly responsible for medication administration and for encouraging self-care practices.

Paiva (2020) highlights that the inclusion of the pharmacist in continuing education programs has a positive impact, as it enables greater adherence to prescriptions, improves understanding of the disease,

and increases patient autonomy in self-care. When such interventions are developed in a multiprofessional manner, with the participation of physicians, nurses, nutritionists, and physical therapists, the possibilities for a comprehensive approach are expanded, also strengthening the family's role in supporting treatment. This integrated approach is recommended by the National Primary Care Policy (PNAB) and is supported by programs such as the Family Health Strategy (FHS), which seeks to promote care close to the community and centered on the needs of the elderly patient.

In summary, the analysis of the literature shows that population aging associated with the growing prevalence of T2DM requires comprehensive, interdisciplinary, and continuous care. The clinical pharmacist stands out as a strategic actor in promoting adherence, the rational use of medications, and the strengthening of self-care. Health education programs adapted to the needs of older adults, combined with pharmaceutical follow-up, constitute effective strategies for overcoming barriers and improving therapeutic outcomes, contributing not only to patients' quality of life, but also to the sustainability of the healthcare system.

CONCLUSION

This review made it possible to broadly understand the relevance of pharmaceutical intervention in the treatment of elderly diabetic patients. It was verified that the pharmacist's role, through continuous guidance and health education, significantly contributes to therapeutic adherence and the strengthening of self-care. Thus, the objective proposed in this work was achieved, since it was possible to highlight the importance of this professional in improving the quality of life of this population.

The research problem was also answered, demonstrating that pharmaceutical guidance has a direct and positive impact on disease control and on the prevention of complications, especially in a context marked by the frailties inherent to aging, such as polypharmacy and cognitive difficulties. However, it should be noted that some limitations were present, such as the restriction of the search to publications from certain databases and the defined time frame, which may have excluded other relevant contributions.

It is recommended that new studies be conducted using diversified methodologies and in different practice settings, in order to broaden understanding of the most effective intervention strategies. In addition, the development of interdisciplinary programs that strengthen the pharmacist's role alongside other healthcare professionals is suggested. Thus, this work not only reinforces the importance of pharmaceutical intervention in the care of the elderly diabetic patient, but also points to paths for future research and for the consolidation of sustainable and replicable practices in different contexts.

REFERENCES

Bonifácio, A. C. R. *Impacto da intervenção farmacêutica na adesão ao tratamento medicamentoso do paciente idoso diabético* [Impact of pharmaceutical intervention on adherence to drug treatment in elderly diabetic patients]. Dissertação (Mestrado em Ciências Farmacêuticas) – Universidade de São Paulo, Ribeirão Preto, 2013.

Brasil. Ministério da Saúde. *Cadernos de Atenção Básica: Saúde da Pessoa Idosa* [Primary Care Notebooks: Health of Older Persons]. Brasília: Ministério da Saúde, 2021.

Camacho, K. H.; Carvalho, G. A. de; Marini, D. C. Acompanhamento farmacoterapêutico de pacientes idosos diabéticos [Pharmacotherapeutic follow-up of elderly diabetic patients]. *Brazilian Journal of Implantology and Health Sciences*, v. 5, n. 2, p. 212–230, 2023. Available at: https://bjihealth.com.br/index.php/bjihs/article/view/776. Accessed on: 13 May 2025.

Costa, L. A. et al. Acompanhamento farmacoterapêutico em pacientes diabéticos: impacto clínico e educativo [Pharmacotherapeutic follow-up in diabetic patients: clinical and educational impact]. *Revista Brasileira de Ciências Farmacêuticas*, v. 56, n. 4, p. 603–611, 2020.

De Melo, G. S. B. S. et al. Protocolo de cuidado farmacêutico a indivíduos com diabetes mellitus [Pharmaceutical care protocol for individuals with diabetes mellitus]. *Revista Eletrônica Acervo Saúde*, n. 29, p. e843, 2019. Available at: https://acervosaude.com.br/index.php/saude/article/view/843. Accessed on: 13 May 2025.

Ferreira Júnior, M. A.; Batista, R. L. A atenção farmacêutica a pacientes idosos e diabéticos em drogarias [Pharmaceutical care for elderly and diabetic patients in drugstores]. *Revista Saúde e Desenvolvimento*, v. 12, n. 7, 2018.

Gonçalves, I. C. M.; Sachett, J. A. G. Adesão ao tratamento medicamentoso e não medicamentoso em adultos com diabetes mellitus tipo 2 [Adherence to pharmacological and non-pharmacological treatment in adults with type 2 diabetes mellitus]. *Mundo Saúde*, São Paulo, v. 43, n. 4, p. 647–655, 2019.

Oliveira, A. O. S. da; Conceição, G. D. da; Marquez, C. O. A atenção farmacêutica a pacientes idosos e diabéticos em drogarias [Pharmaceutical care for elderly and diabetic patients in drugstores]. *Research, Society and Development*, v. 12, n. 13, p. e68121344277, 2023. Available at: https://rsdjournal.org/index.php/rsd/article/view/44277. Accessed on: 13 May 2025.

Oliveira, T. R. et al. Educação em saúde com foco em autocuidado em idosos com diabetes mellitus tipo 2 [Health education focused on self-care in older adults with type 2 diabetes mellitus]. *Ciência & Saúde Coletiva*, v. 24, n. 11, p. 4295–4304, 2019.

Paiva, R. A. *Promoção do autocuidado em indivíduos diabéticos na Unidade Básica de Saúde São João do Rosário, Rosário - MA* [Promotion of self-care in diabetic individuals at São João do Rosário Primary Health Unit, Rosário - MA]. Projeto UNA-SUS, 2020. Available at: https://ares.unasus.gov.br. Accessed on: 03 May 2025.

Prado, M. A. M. B. do; Francisco, P. M. S. B.; Barros, M. B. A. Diabetes em idosos: uso de medicamentos e risco de interação medicamentosa [Diabetes in older adults: medication use and risk of drug interaction]. *Ciência & Saúde Coletiva*, v. 21, p. 3447–3458, 2016. Available at: https://www.scielo.br/j/csc/a/gBgscGjcHVpcxd6byfGzDqc. Accessed on: 13 May 2025.

Ricardo, C. J. S. et al. O papel do farmacêutico na adesão à farmacoterapia em pacientes com diabetes mellitus tipo 2 [The pharmacist's role in adherence to pharmacotherapy in patients with type 2

diabetes mellitus]. *Revista Eletrônica Multidisciplinar de Investigação Científica*, v. 2, n. 3, 2023. Available at: https://remici.com.br/index.php/revista/article/view/52. Accessed on: 13 May 2025.

Rodrigues, R. C. A. et al. Cuidados farmacêuticos e envelhecimento: desafios no uso de medicamentos em idosos [Pharmaceutical care and aging: challenges in medication use among older adults]. *Revista Brasileira de Geriatria e Gerontologia*, v. 23, n. 1, p. 1–10, 2020.

Sociedade Brasileira de Diabetes. *Diretrizes da Sociedade Brasileira de Diabetes 2022–2023* [Brazilian Diabetes Society Guidelines 2022–2023]. São Paulo: SBD, 2022.

Souza, M. A. A. et al. Adesão de pessoas idosas ao tratamento de hipertensão e diabetes: revisão integrativa [Adherence of older adults to hypertension and diabetes treatment: an integrative review]. *Revista Eletrônica Acervo Saúde*, v. 15, n. 3, 2023.

Silva, R. A.; Machado, K. C. A atenção farmacêutica no tratamento do diabetes mellitus frente à qualidade de vida dos idosos [Pharmaceutical care in diabetes mellitus treatment in relation to the quality of life of older adults]. *Innovatio & Science Journal*, v. 3, 2025. Available at: https://intellectuspress.com/index.php/inovatioscienceJournal/article/view/12. Accessed on: 13 May 2025.

Tanqueiro, M. T. O. S. A gestão do autocuidado nos idosos com diabetes: revisão sistemática da literatura [Self-care management in older adults with diabetes: a systematic literature review]. *Revista de Enfermagem Referência*, v. 7, n. 4, p. 17–26, 2015.