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Effect of nursing interventions on improving medication adherence in patients with type 2 diabetes mellitus

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ADMINISTRATIVE INFORMATION

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Review Stage at time of this submission - Formal screening of search results against eligibility criteria.

Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 5 May 2026 and was last updated on 5 May 2026.

INTRODUCTION

Review question / Objective To identify nursing interventions that have been implemented to improve adherence to pharmacological treatments and their effect on patients with type 2 diabetes mellitus through a rapid systematic review.
The research question was formulated using the PICO acronym (Population, Intervention, Comparison, and Outcome), where P: adults with type 2 diabetes mellitus; I: Nursing-led interventions to improve adherence to pharmacological treatment for type 2 diabetes mellitus (T2DM); C: Conventional therapeutic recommendations; O: Level of adherence.

Rationale This systematic review was conducted to highlight the role of nursing in adherence to pharmacological treatments for T2DM. Although previous systematic reviews on adherence in T2DM exist, these have significant limitations for the discipline; some include multidisciplinary interventions without distinguishing the specific role of nursing, do not focus exclusively on adherence to pharmacological treatments, and several do not incorporate recent studies reflecting innovations in nurse-led interventions for T2DM care. For all these reasons, it is essential to address the knowledge gap regarding the specific effectiveness of nursing-led interventions on medication adherence in this population in a rigorous and up-to-date manner, to identify the characteristics, components, or contexts in which nursing interventions are most effective, and to guide future lines of research.

Condition being studied Type 2 diabetes mellitus (T2DM) is a chronic metabolic disease characterized by high blood glucose levels. It is

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prevalent on a global scale, leading to consequences or complications associated with T2DM and increasing morbidity and mortality rates, thus remaining a growing public health problem.

The magnitude of this disease is initially reflected in the continuous hospital readmissions, which, in turn, reflects the constant increase in healthcare costs within the healthcare system. Furthermore, the spotlight is directed toward the morbidity and mortality data recorded year after year, with diabetes mellitus ranking as the second and third leading cause of death in the country.

T2DM has a multifactorial origin, as its development involves genetic, environmental, and lifestyle factors; therefore, treatments aimed at improving the condition focus on the management and control of blood glucose levels, specifically when prescribing medications as the primary strategy for managing and controlling the disease.

Adherence refers to the extent to which a person maintains behavior consistent with the recommendations provided by healthcare professionals, in which the patient must, in turn, express agreement to follow them. However, when it comes to prescribing pharmacological treatments, the professional's role goes beyond simply prescribing them, since adherence to medications requires greater interest and responsibility from the professional in clinical practice.

It has been shown that there are various causes that disrupt adherence to pharmacological treatments; these, in turn, can be factors related to the patient, factors related to the treatment, and those related to the healthcare system and the care team, with the underlying cause directly impacting adherence.

Given the diversity of factors that prevent or limit adherence, various strategies have been studied that call for multidisciplinary intervention to achieve treatment goals and ensure adherence.

Regarding these strategies, among others, are those that allow for a greater role for nursing, since care is directed toward the supervision, monitoring, promotion, and prevention of behaviors that may lead to pharmacological risks, as well as the timely and appropriate identification of needs to guide patients toward a precise understanding of their illness and the treatment that has been prescribed.

It has been noted that nursing-led strategies are key guidelines for patient care and monitoring, which should be implemented at all times during the delivery of healthcare, given that nurses are the healthcare professionals who maintain the closest and most continuous contact with patients; their participation is a key pillar in improving adherence, since nursing care fosters an environment of trust, facilitating the identification of patient needs and enabling the provision of individualized care, support, and, fundamentally, by creating a space of trust where it is possible to intervene to prevent complications related to poor disease management, offering recommendations to improve treatment adherence, such as those to prevent or manage adverse effects, recommendations to prevent drug interactions or interactions with food and/or beverages, the benefits of treatments, and even techniques and strategies to understand the schedules and frequencies for self-administration. In addition to these, therapeutic monitoring strategies have been key to strengthening adherence, which nursing professionals can integrate to improve the health of the population.

METHODS

Search strategy In compliance with the PRISMA 2020 guidelines, the search for articles was conducted through April 16, 2026, in the following scientific article databases: PubMed, Web of Science, Scopus, SciELO, and LILACS, using the keywords and strategy described below: (nurse-led[Title]) AND (adherence[Title]), with the exception of SciELO, where the following strategy was used: (ti:(adherence)) AND (ti:(nurse)).

A search of gray literature was also conducted to identify unpublished studies or those that might offer relevant information in the following databases: BVS, ScienceDirect, Google Scholar, UDLAP Digital Thesis Collection, and TESIUNAM.

The titles and abstracts obtained through the search strategy were evaluated by two reviewers (D. R-J, J. G-M). After selecting the titles and abstracts that met the study criteria, the full texts of some articles potentially relevant to the systematic review were obtained, from which those meeting the eligibility criteria were selected.

Participant or population Adults ≥18 years of age.

Intervention Nursing-led interventions to improve adherence to pharmacological treatment in type 2 diabetes mellitus (T2DM).

Comparator Conventional therapeutic recommendations.

Study designs to be included Intervention studies.

Eligibility criteria The eligibility criteria were: a) nursing-led interventions, b) assessment of

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adherence to pharmacological treatments for T2DM.

Information sources Electronic databases: PubMed, Web of Science, Scopus, SciELO, LILACS, BVS, ScienceDirect, Google Scholar, UDLAP Digital Thesis Collection, and TESIUNAM.

Main outcome(s) The included studies measured adherence to T2DM drug treatments as a result of interventions that were primarily led by nursing professionals.

Additional outcome(s) Levels of glycated hemoglobin or blood glucose, as well as the duration of the disease, were also measured and reported.

Data management A researcher will independently analyze the studies, then extract the most relevant data from them, and assess the risk of bias in the selected articles; a committee of experts will resolve any discrepancies. If data are not available for the manuscripts, the corresponding authors or co-authors will be contacted to obtain the original data to the greatest extent possible.

Quality assessment / Risk of bias analysis The full text of each selected study will be analyzed in detail to exclude those that do not meet the eligibility criteria; furthermore, methodological quality will be assessed using the appropriate tools for each study design.

Strategy of data synthesis A comprehensive, differentiated analysis of changes in adherence to pharmacological treatment related to the intervention will be conducted.

Subgroup analysis For the purposes of the analysis, a stratified analysis will be performed based on the degree of adherence to pharmacological treatment in relation to glycated hemoglobin or capillary blood glucose levels.

Sensitivity analysis Sensitivity analysis will be performed on the studies, excluding those that describe paradoxical results.

Language restriction English, Spanish, and Portuguese.

Country(ies) involved Mexico.

Keywords Adherence, nursing interventions, diabetes mellitus.

Dissemination plans The results will be published in an indexed international journal.

Contributions of each author

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