



## A Comprehensive Review of Factors Impacting Medication Adherence among Elderly Diabetic Patients

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### ABSTRACT

This study focused on addressing the prevalent issue of inadequate medical adherence among seniors with chronic conditions, particularly type 2 diabetes, by investigating the impact of targeted interventions on improving treatment compliance. elderly patients' adherence to medication is influenced by factors such as education level, health issues, dosing frequency, and satisfaction with counselling. However, functional health literacy was not found to be a contributing factor. To improve medication adherence, pharmacists should take into account individual patient characteristics, provide clear explanations, and ensure patient satisfaction with counselling. Tailored approaches are necessary to enhance medication adherence in elderly diabetic patients, with strategies varying depending on the healthcare setting in which they receive treatment.

**Keyword:** Type 2 diabetes, Medication adherence, chronic condition, counselling, dosing frequency

### INTRODUCTION

Diabetes mellitus is a pervasive chronic condition among the elderly, necessitating strict medication adherence to effectively manage the disease. However, elderly patients often encounter significant challenges in adhering to their medication regimens. This article seeks to identify the key factors influencing medication adherence in elderly patients with diabetes mellitus.

A comprehensive review of existing literature reveals that cognitive decline, polypharmacy, physical limitations, lack of understanding, and socioeconomic factors are substantial barriers to medication adherence. Recognizing these factors is crucial for healthcare providers to develop targeted strategies to enhance medication adherence and ultimately improve health outcomes in elderly diabetic patients.

To address these challenges, healthcare providers can implement strategies such as simplifying medication regimens, using reminders, educating patients, addressing side effects, involving caregivers, and providing financial support. By doing so, elderly diabetic patients can better manage their condition and improve their overall health outcomes.

According to the recent literature, there are various risk factors associated with nonadherence in the elderly. These include patient factors (eg, old age, male gender, low education level, physical and mental status, and health literacy [HL]), medication factors (eg, complexity of medication regimen, high medication costs, and poor labeling instructions), patient-provider relationship factors (dissatisfaction with health care providers, lack of trust, and lack of patient involvement), and health care system factors (eg, inability or difficulty in accessing pharmacy, lack of follow-up, and poor treatment by untrained staff).

### FACTORS AFFECTING MEDICATION ADHERENCE IN ELDERLY PATIENTS WITH DIABETES MELLITUS

#### • Cognitive Decline

Cognitive decline is a significant predictor of poor medication adherence in elderly diabetic patients, as it affects their ability to remember and manage their medications, leading to confusion, forgetfulness, and difficulty understanding medication instructions.



Additionally, cognitive decline can impair an individual's ability to perform daily tasks, including managing their medications, which can result in poor adherence.

- Polypharmacy

Polypharmacy is a major challenge in elderly diabetic patients, as taking multiple medications can lead to confusion, increased risk of medication interactions, and difficulty managing multiple medications, ultimately resulting in poor medication adherence. Furthermore, polypharmacy can also lead to increased healthcare costs, hospitalizations, and mortality rates.

- Physical Limitations

Physical limitations, such as arthritis, visual impairments, and mobility issues, can significantly impact medication adherence in elderly diabetic patients, making it difficult for them to manage their medications, open medication bottles, read medication labels, and inject insulin. Moreover, physical limitations can also lead to social isolation, depression, and reduced quality of life.

- Lack of Understanding

Limited knowledge about diabetes and its management can lead to poor medication adherence in elderly diabetic patients, as they may not fully understand the importance of their medications, how to take them correctly, and how to manage potential side effects. Furthermore, lack of understanding can also lead to reduced motivation to adhere to medication regimens and poor self-management of diabetes.

- Socioeconomic Factors

Socioeconomic factors, such as financial constraints, lack of access to healthcare, and social isolation, can significantly impact medication adherence in elderly diabetic patients, making it difficult for them to afford medications, access healthcare services, and manage their medications correctly. Additionally, socioeconomic factors can also lead to reduced quality of life, increased healthcare costs, and poor health outcomes.

## **CONSEQUENCE OF POOR MEDICATION ADHERENCE**

Poor medication adherence can have severe and far-reaching consequences for elderly patients with diabetes mellitus, significantly impacting their quality of life, health outcomes, and overall well-being.

- Poor Glycemic Control

Inconsistent medication use can lead to poor blood sugar control, thereby increasing the risk of developing devastating complications, including diabetic retinopathy, which can cause blindness and vision loss, diabetic neuropathy, which can result in chronic pain, numbness, and tingling, and diabetic kidney disease, which can lead to kidney failure and the need for dialysis or transplantation.

- Increased Risk of Hospitalization

Poor medication adherence can lead to acute complications, such as hyperglycemia, which can cause severe dehydration, electrolyte imbalances, and even coma, and hypoglycemia, which can result in confusion, seizures, and loss of consciousness, thereby necessitating emergency care and hospitalization, and leading to increased healthcare costs, prolonged recovery times, and a higher risk of mortality.

- Reduced Quality of Life

Uncontrolled diabetes can have a profound impact on an elderly person's overall health and quality of life, leading to chronic pain and discomfort, which can limit mobility and independence, fatigue and weakness, which can make everyday activities challenging, loss of independence, which can result in decreased self-esteem and confidence, and reduced social interaction and isolation, which can exacerbate depression and anxiety.



By understanding the consequences of poor medication adherence, healthcare providers can emphasize the importance of adherence and work with patients to develop effective strategies to improve medication management and overall health outcomes.

## **STRATEGIES TO IMPROVE MEDICATION ADHERENCE**

Effective medication adherence is crucial for achieving optimal health outcomes, particularly among elderly individuals. Poor medication adherence can lead to reduced therapeutic effectiveness, increased risk of complications, and higher healthcare costs. Therefore, implementing strategies to improve medication adherence is essential.

### • Simplifying Medication Regimens

Simplifying medication regimens is a critical step in enhancing adherence. This can be achieved by minimizing the number of medications prescribed, reducing the frequency of dosages, using combination therapies or single-pill combinations, and synchronizing medication refills to reduce the need for frequent pharmacy visits. By simplifying medication regimens, healthcare providers can reduce the cognitive burden associated with managing multiple medications, making it easier for elderly patients to adhere to their treatment plans.

### • Utilizing Medication Reminders

Technology-based solutions can significantly improve medication adherence. These solutions include medication management apps that send reminders and track adherence, automated pill dispensers that dispense medications at predetermined times, and reminder systems that send alerts via phone, email, or text message. These solutions can help elderly individuals stay on track with their medication schedules, reducing the risk of missed doses and improving overall adherence.

### • Patient Education and Empowerment

Ensuring that elderly patients are well-informed about their medications is vital for promoting adherence. Healthcare providers should provide clear and concise instructions on medication use, explain the importance and benefits of each medication, discuss potential side effects and how to manage them, and encourage patients to ask questions and express concerns. By empowering patients with knowledge, healthcare providers can promote a sense of ownership and responsibility, leading to improved medication adherence.

### • Effective Side Effect Management

Addressing side effects is critical for maintaining medication adherence. Healthcare providers should monitor patients for potential side effects, adjust medications or dosages as needed, switch to alternative treatments with fewer adverse effects, and educate patients on how to manage side effects. By minimizing side effects, healthcare providers can reduce the likelihood of patients discontinuing their medications, improving overall adherence.

### • Caregiver Involvement and Support

Family members or caregivers can play a pivotal role in ensuring that elderly patients adhere to their treatment regimens. Healthcare providers should encourage caregivers to participate in patient education and counseling, provide caregivers with resources and support to help manage medications, and foster open communication between caregivers, patients, and healthcare providers. By involving caregivers in the care process, healthcare providers can ensure that elderly patients receive the support and assistance they need to adhere to their medication regimens.

## **METHODS TO MEASURE ADHERENCE**

Measuring adherence to medication regimens is crucial for effective disease management and optimal health outcomes. Various methods have been developed to assess adherence, which can be broadly categorized into direct and indirect methods.

### Direct Methods

Direct methods of measuring adherence are highly accurate but often expensive and time-consuming. However, direct methods have some limitations. Variations in metabolism can affect the accuracy of the results, and "white coat adherence" (patients adhering to their regimen only when being observed) can also lead to inaccurate results.



## Indirect Methods

Indirect methods of measuring adherence are often more practical and cost-effective than direct methods. Indirect method has its advantages and disadvantages, and no single method is considered the gold standard. Patient self-reports are a simple and commonly used method, but may be susceptible to misrepresentation. Pill counts are also widely used but have limitations, such as patients discarding pills before hospital visits. Electronic medication monitors provide accurate data but may be expensive.

## CONCLUSION

Patient medication non-adherence is a pervasive global health issue, driven by a complex array of interconnected factors. While patient education is a crucial component in enhancing compliance, the strategic deployment of compliance aids, motivational incentives, and supportive interventions has also been shown to significantly bolster medication adherence.

To optimize therapeutic outcomes, healthcare professionals must identify and implement pragmatic strategies to improve medication adherence within their practice settings. This endeavor necessitates a multidisciplinary approach, collaboratively engaging all stakeholders involved in medication use, including patients, caregivers, pharmacists, physicians, and nurses.

By fostering a collaborative environment and leveraging evidence-based strategies, healthcare providers can mitigate the challenges of medication non-adherence, ultimately enhancing patient outcomes and improving the overall quality of care.

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