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Medication adherence in chronic illness: Barriers, interventions and outcomes

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Abstract

Medication adherence is crucial for managing chronic illness, yet non-adherence is still common worldwide.

Objective: To review the barriers to adherence, evaluate interventions, and assess outcomes.

Methods: This is a narrative review that synthesizes systematic reviews, RCTs, and meta-analyses from 2016 to 2025.

Results: Barriers include issues related to patients, therapy, conditions, socioeconomic factors, and health systems. Evidence-based interventions include simplifying regimens, pharmacist-led programs, SMS reminders, apps, electronic monitoring, and motivational interviewing. Improved adherence highlights better disease control and lower costs.

Conclusion: Tailored, multicomponent interventions are most effective. Future research should focus on ensuring long-term sustainability and equity.

Keywords: Medication adherence, Barriers, long-term sustainability, assess outcomes

Introduction

Chronic diseases cause most global illness and death. Despite the availability of effective drugs, outcomes remain poor because of low adherence. The WHO states that adherence is vital for success, but only around 50% of patients in developed nations follow their medication plans. This percentage is even lower in low- and middle-income countries. This review covers barriers, interventions, and outcomes related to adherence.

Methods

We conducted a narrative review using PubMed and Scopus from 2016 to 2025. Keywords included 'medication adherence', 'chronic disease', 'barriers', 'interventions', and 'outcomes'. We classified barriers using the WHO framework, while interventions were grouped as simplification, education, pharmacist support, digital/E-Health tools, reminders, motivational interviewing, and financial/logistic assistance.

Barriers to Medication Adherence

We classified barriers using the WHO framework.

Table 1: WHO five dimensions of medication adherence and common barriers

Dimension	Examples of barriers
Patient-related	Forgetfulness, depression, low literacy, poor beliefs about medicines
Therapy-related	Polypharmacy, complex dosing, adverse effects, long duration
Condition-related	Asymptomatic disease, multimorbidity
Socioeconomic	Cost, access, transport, low income
Health system/team	Poor communication, fragmented care, lack of follow-up

Interventions to improve adherence

Table 2: Evidence-based interventions to improve adherence

Intervention type	Strategy / examples	Effectiveness Evidence
Regimen simplification	Once-daily dosing, fixed-dose combinations	Strong, consistent
Education & pharmacist support	Counselling, reviews, follow-up	Moderate–strong
Reminder systems	SMS, phone calls, pillboxes	Effective short-term
Digital health tools	Mobile apps, web platforms	Promising, variable
Electronic monitoring	Smart pillboxes + feedback	Moderate, context-specific
Motivational interviewing	Shared decision-making	Moderate
Financial/logistic support	Subsidies, delivery, refill sync	Strong in cost-sensitive settings

Outcomes of Improved Adherence

- **Clinical:** Better blood pressure, HbA1c, viral suppression.
- **Healthcare utilization:** Fewer admissions.
- **Economic:** Reduced costs.
- **Quality of life:** Improved satisfaction.

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Discussion

Adherence has many factors; interventions work best when they are multicomponent and tailored. SMS reminders and regimen simplification are scalable. Digital tools and monitoring show promise, but they require user engagement. The strongest evidence supports short-term improvements, while long-term sustainability is still uncertain.

Conclusion

Medication adherence in chronic illness is a worldwide issue. Effective interventions are tailored and multicomponent. Future studies should focus on long-term sustainability, cost-effectiveness, and equity.

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All authors have made an equal contribution

Conflict of Interest

All of the authors affirm no conflicts of interest.

Consent for Publication

All authors have provided the consent for the publication of their work.

Competing Interests

The authors have confirmed that they have no competing interests.

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