



Medication Therapy Management and Its Influence on Patient Adherence

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Abstract

Medication non-adherence remains a major barrier to effective healthcare worldwide, contributing to poorer outcomes, increased hospitalizations, and higher healthcare costs. Medication Therapy Management (MTM) has emerged as a structured spectrum of patient-centered services aiming to optimize pharmacotherapy and support patients' adherence to their medication regimens. This paper reviews recent evidence on MTM interventions, highlighting how MTM influences patient adherence and related outcomes across clinical contexts. The findings underscore the critical role of pharmacists and interdisciplinary teams in improving medication adherence, patient satisfaction, and health outcomes.

Introduction

Medication therapy management (MTM) refers to a range of clinical services provided by pharmacists and healthcare professionals, designed to optimize therapeutic outcomes and reduce medication-related problems. MTM often includes comprehensive medication reviews, patient education, follow-up monitoring, and collaboration with prescribers and other healthcare providers. Medication adherence — the extent to which a patient takes medications as prescribed — is crucial for the effectiveness of drug therapy, especially in chronic conditions such as diabetes, hypertension, and chronic kidney disease. Poor adherence can result in treatment failure, disease progression, and increased healthcare utilization.



Medicine Adherence: Challenges and Significance

Medication non-adherence is widespread and multifactorial. Patients may fail to adhere because of complex regimens, side effects, knowledge gaps, or limited understanding of their therapy. Non-adherence has been associated with worse clinical outcomes, lower quality of life, and greater direct and indirect costs. Improving adherence is therefore a priority in therapeutic management and public health.

Healthcare systems are increasingly recognizing the need for interventions targeting adherence. MTM has been proposed as a promising strategy, especially when led by trained pharmacists embedded in clinical or community settings.

MTM Interventions and Patient Adherence

Pharmacist-Led MTM Impact

Recent research confirms that MTM programs positively impact adherence. A systematic review reported that pharmacist-led MTM interventions significantly improved medication adherence and overall outcomes by optimizing medication regimens, providing personalized counseling, and addressing drug-related problems.

In chronic disease populations, similar improvements have been observed. For example, a quasi-experimental study involving patients with diabetes, hypertension, and dyslipidemia showed that the group receiving pharmacist-led MTM services experienced higher adherence and better clinical outcomes compared with standard care.

Randomized Controlled Trials

Randomized controlled trials (RCTs) provide strong evidence of MTM effectiveness. An RCT conducted among patients with uncontrolled diabetes demonstrated that participants in an MTM program were significantly more likely to adhere to their medication regimens compared to those receiving standard care. These results confirm that MTM interventions can increase adherence rates, reduce drug-related problems, and improve clinical endpoints such as HbA1c levels.

In non-dialysis chronic kidney disease patients, MTM services not only improved medication adherence over time but also enhanced health-related quality of life compared to usual care.

Broader Clinical Applications

The positive influence of MTM on adherence is not limited to specific diseases. In elderly populations with multiple chronic conditions, collaborative MTM programs reduced adverse drug events and significantly increased adherence scores. In hypertension management, patients reported improved understanding of their medication and perceived that MTM services helped them follow treatment recommendations more effectively.



Mechanisms of MTM Influence on Adherence

Several mechanisms explain why MTM improves adherence:

1. **Comprehensive Medication Review:** Pharmacists identify potential drug-related issues, including duplications, interactions, and dosing problems, that might hinder adherence.
2. **Patient Education:** Clear explanations about the purpose, benefits, and possible side effects of medications empower patients. Education increases health literacy and encourages consistent adherence.
3. **Follow-Up and Monitoring:** Regular follow-up appointments allow pharmacists to reinforce education, adjust therapy where needed, and respond to patient concerns.
4. **Interprofessional Collaboration:** MTM often involves integrated care teams. Communication between pharmacists and prescribers helps tailor regimens and address barriers to adherence.

These elements collectively enhance patients' engagement in their own care and support long-term adherence, particularly among individuals with complex regimens.

Challenges and Limitations

Despite clear benefits, implementation of MTM faces challenges. Uptake in some regions remains limited due to infrastructure barriers, lack of integration with electronic health records, and variable training or reimbursement structures. Additionally, variations in service models and patient populations can lead to inconsistent outcomes across studies.

The heterogeneity of methods used to measure adherence also complicates comparisons between studies. Different scales and follow-up periods influence reported adherence rates, emphasizing the need for standardized evaluation tools.

Discussion

Existing literature demonstrates consistent evidence that MTM interventions contribute to improved medication adherence — a critical determinant of effective pharmacotherapy — across a range of patient groups and care settings. Pharmacist involvement appears especially impactful due to their specialized expertise in medications and frequent patient contact.

Improved adherence through MTM translates to broader health benefits. Patients who adhere to treatment regimens show better disease control, reduced drug-related problems, decreased hospital visits, and improved quality of life. These outcomes not only benefit patients but also support healthcare systems by lowering avoidable costs.



Going forward, scaling MTM services will require policy support, enhanced training for providers, and integration with broader healthcare systems, ensuring adherence support is sustainable and widely accessible.

Conclusion

Medication Therapy Management significantly influences medication adherence, leading to improved clinical, humanistic, and health system outcomes. Recent research consistently shows that structured MTM services — especially those led by pharmacists — enhance adherence rates, reduce medication-related problems, and improve patient satisfaction across diverse populations. Integrating MTM into routine clinical practice holds promise for addressing adherence challenges and optimizing pharmacotherapy outcomes in chronic disease management.

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