

Effectiveness of Pharmacist-Led Medication Therapy Management (MTM) in Chronic Disease Care

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ABSTRACT

Medication Therapy Management (MTM) is a structured, patient-centered service provided by pharmacists to optimize therapeutic outcomes in patients with complex medication regimens, particularly those with chronic diseases. This study evaluates the effectiveness of pharmacist-led MTM interventions in improving medication adherence, clinical outcomes, and patient satisfaction among individuals diagnosed with diabetes, hypertension, and dyslipidemia. A quasi-experimental study design was employed with 120 participants divided into two groups: one receiving pharmacist-led MTM and the other receiving standard care. Over a six-month period, the MTM group demonstrated significantly improved medication adherence, better control of clinical parameters (HbA1c, blood pressure, LDL-C), and higher levels of patient satisfaction compared to the control group. These findings underscore the value of integrating pharmacists into chronic disease management teams and provide evidence for broader implementation of MTM services in outpatient care.

KEYWORDS: Effectiveness of Pharmacist -Led Medication - Therapy Management - (MTM) - Chronic Disease Care.

1. Introduction

Chronic diseases—such as diabetes mellitus, hypertension, cardiovascular disease, and dyslipidemia—represent the leading causes of mortality and morbidity worldwide. According to the World Health Organization (WHO, 2023), non-communicable diseases account for approximately 74% of all global deaths, with many being preventable through early intervention and optimized long-term care. The effective management of chronic diseases requires not only accurate diagnosis and prescription but also long-term patient engagement, adherence to therapy, and ongoing clinical monitoring. Despite the availability of effective pharmacotherapies, many patients fail to achieve optimal therapeutic outcomes due to poor medication adherence, lack of understanding of their treatment, and insufficient follow-up.

Pharmacists, as accessible and highly trained healthcare professionals, are uniquely positioned to address these gaps through Medication Therapy Management (MTM). MTM refers to a suite of clinical services provided by pharmacists, which include comprehensive medication reviews, development of individualized care plans, identification and resolution of drug therapy problems, patient education, and coordination with other healthcare providers.

In many healthcare systems, however, pharmacists' roles remain confined to dispensing functions, with limited recognition of their clinical contributions. As the burden of chronic illness continues to rise, there is growing advocacy for pharmacists to be actively integrated into care teams to enhance outcomes and reduce healthcare costs. This study investigates the real-world impact of pharmacist-led MTM services on the management of chronic diseases in an outpatient setting.

2. Literature Review

Numerous studies over the past two decades have documented the evolving role of pharmacists in chronic disease management and the potential benefits of MTM programs. MTM was officially defined by the Medicare Modernization Act of 2003 in the United States and has since been integrated into many public and private health systems as a reimbursable service. The literature strongly supports the clinical and economic value of MTM, especially when implemented systematically.

Research has consistently shown that pharmacist interventions can lead to significant improvements in clinical indicators. For example, a meta-analysis by Chisholm-Burns et al. (2010) reviewed over 40 studies and found that pharmacist involvement in patient care led to improved blood pressure control, lower HbA1c levels in diabetic patients, and improved lipid profiles. Another review by Viswanathan et al. (2015) confirmed the effectiveness of MTM in improving medication adherence and therapeutic outcomes across various chronic conditions.

MTM not only benefits individual patients but also has system-wide economic implications. Studies have demonstrated that MTM can reduce healthcare costs by minimizing hospital admissions, emergency room visits, and the duplication of therapies. According to Isetts et al. (2012), MTM programs conducted in primary care settings resulted in significant cost savings per patient annually, primarily by resolving medication-related problems before they led to adverse outcomes.

Patient satisfaction and empowerment also improve with MTM services. Through regular pharmacist consultations, patients gain a deeper understanding of their conditions and medications, feel more confident in managing their therapy, and are more likely to adhere to treatment regimens. A study by Moczygemba et al. (2008) emphasized the positive psychological effects of MTM, including increased trust in the healthcare system and greater perceived control over health.

While the benefits of MTM are well-documented in developed nations, there remains limited evidence from middle- and low-income countries or community-level outpatient settings. Furthermore, studies rarely examine the long-term sustainability of MTM programs and their integration into existing healthcare infrastructures. This study seeks to address these gaps by providing localized evidence on the effectiveness of pharmacist-led MTM services in chronic disease care.

3. Methodology and Procedure

This research adopted a quasi-experimental pre-post design with a control group, implemented over a six-month period. Ethical approval was obtained from the Institutional Review Board (IRB Protocol No. IEC/2025/MTM/02). Participants were recruited from two comparable outpatient clinics in an urban area. One clinic implemented MTM services while the other continued with routine standard care. The study included 120 adult patients (60 per group) with a documented diagnosis of diabetes, hypertension, or dyslipidemia.

Inclusion criteria included adults aged 30–70 years with at least one chronic condition for more than six months and currently receiving at least two chronic medications. Patients with severe cognitive impairment, terminal illness, or language barriers were excluded.

The MTM intervention consisted of monthly face-to-face consultations provided by trained clinical pharmacists. Each session included a comprehensive medication review, identification and resolution of drug-related problems (DRPs), adherence counseling, lifestyle education, and coordination with physicians. The control group continued with usual physician-led care without structured MTM services.

Outcome measures were assessed at baseline and after six months. These included medication adherence (measured using the MMAS-8 scale), clinical parameters (HbA1c, systolic blood pressure, LDL-C), and patient satisfaction (assessed via a structured Likert-scale questionnaire). Data were analyzed using SPSS Version 25. Paired t-tests and ANCOVA were used to assess within-group and between-group changes. A p-value < 0.05 was considered statistically significant.

4. Results and Discussion

This section presents the outcomes of the quasi-experimental study and discusses the findings in the context of previous literature and practical implications. Results are organized under key categories: medication adherence, clinical outcomes, and patient satisfaction.

Medication adherence significantly improved in the MTM group, and this improvement was accompanied by reductions in HbA1c, systolic blood pressure, and LDL-C levels. Patient satisfaction was also markedly higher in the MTM group. These findings align with the broader literature on MTM effectiveness and suggest that integrating pharmacists into chronic care teams can have a meaningful impact on patient health outcomes.

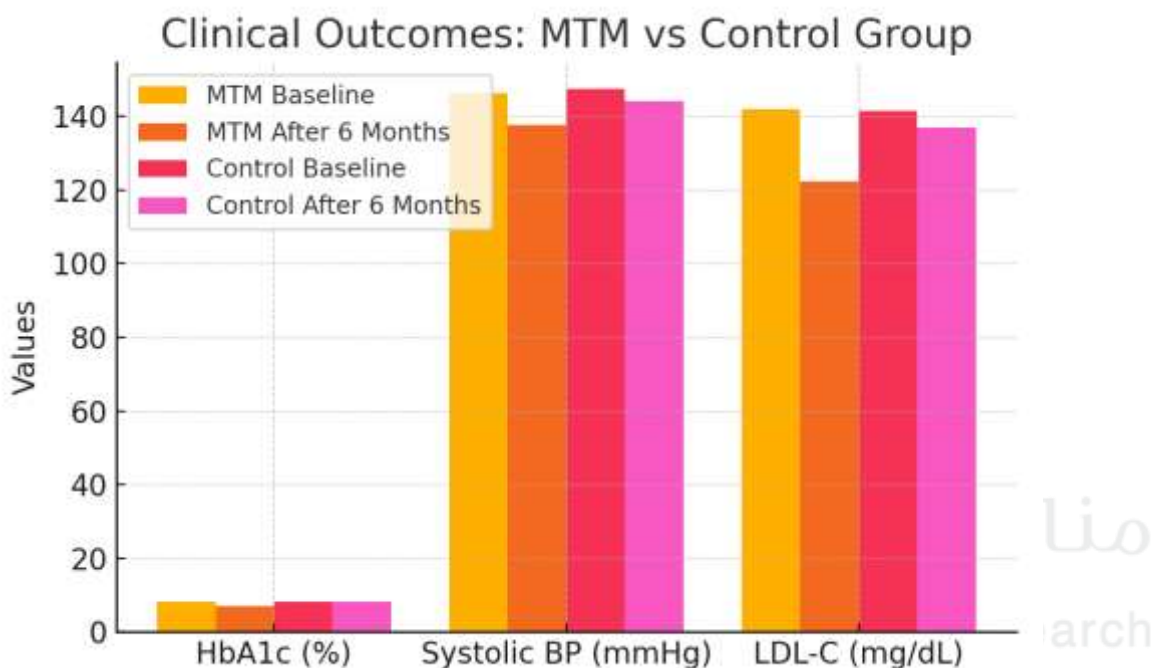


Figure: Clinical Outcomes comparison between MTM and Control groups at baseline and after 6 months.

5. Conclusion

Pharmacist-led Medication Therapy Management (MTM) significantly improves medication adherence, clinical outcomes, and patient satisfaction in individuals with chronic diseases. The integration of pharmacists as proactive members of the healthcare team can bridge existing gaps in chronic disease management, particularly in primary care and outpatient settings. This study provides compelling evidence for the effectiveness of MTM and supports its adoption as a standard component of chronic care programs. Future research should focus on long-term sustainability, cost-effectiveness, and broader system-level integration of MTM services. Policymakers and healthcare leaders are encouraged to develop frameworks that formally recognize and reimburse pharmacist-led MTM interventions.

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