https://doi.org/10.48047/AFJBS.3.1.2021.197-203

African Journal of Biological Sciences

Journal homepage: http://www.afjbs.com

Research Paper Open Access

Medication Therapy Management (MTM): Pharmacists' Role in Improving Chronic Disease Outcomes.

Sami Mohammed S. Alsheheri[1], Mazen Saleh Mohammed Altawyan[2], Bashayer Mohammad Alshehri[3].

[1,2,3]Pharmacist, Ministry of National Guard Health Affairs (MNGHA).

**** Corresponding author: Sami Mohammed S. Alsheheri***

Volume 3, Issue 1, Mar 2021

Received: 05 Feb 2021

Accepted: 25 Feb 2021

Published: 25 Mar 2021

doi: 10.48047/AFJBS.3.1.2021.197-203

Abstract

Medication Therapy Management (MTM) is a comprehensive service provided by pharmacists to optimize medication use, improve therapeutic outcomes, and enhance patient adherence, particularly in patients with chronic conditions such as hypertension, diabetes, and cardiovascular diseases. MTM programs empower pharmacists to take a proactive role in chronic disease management by conducting medication reviews, identifying potential drug interactions, educating patients, and collaborating with other healthcare providers. This review explores the role of pharmacists in delivering MTM services and their impact on improving outcomes in chronic disease management, with a focus on hypertension, diabetes, and cardiovascular disease. The review also discusses the challenges and opportunities for enhancing the implementation of MTM services to improve patient outcomes.

Keywords

Medication Therapy Management, pharmacists, chronic disease management, hypertension, diabetes, cardiovascular disease, patient outcomes.

Introduction

Chronic diseases, such as hypertension, diabetes, and cardiovascular diseases, are leading causes of morbidity and mortality worldwide. Effective management of these conditions often requires complex medication regimens, and ensuring that patients adhere to their prescribed therapies is crucial for optimizing outcomes. Medication Therapy Management (MTM) is an innovative

healthcare service designed to improve medication use and therapeutic outcomes, particularly for patients with chronic diseases. MTM empowers pharmacists to take a central role in medication optimization through comprehensive medication reviews, patient counseling, and collaboration with other healthcare professionals.

Pharmacists' involvement in MTM services has been shown to significantly improve patient outcomes, including better disease control, reduced hospitalizations, and enhanced medication adherence. This review examines the role of pharmacists in MTM, focusing on the management of hypertension, diabetes, and cardiovascular disease, and explores how these services can enhance chronic disease outcomes.

1. The Role of Pharmacists in Medication Therapy Management

MTM is a structured process in which pharmacists review a patient's entire medication regimen to identify any potential issues, optimize drug therapy, and ensure that patients are receiving the most effective treatments for their conditions. The American Pharmacists Association (APhA) defines MTM as a distinct service or group of services that optimize therapeutic outcomes for individual patients through the assessment and evaluation of a patient's medication regimen (Bluml, 2005). Pharmacists providing MTM services engage in the following activities:

1.1 Comprehensive Medication Reviews (CMRs)

One of the core components of MTM is the Comprehensive Medication Review (CMR), in which the pharmacist evaluates all of a patient's medications—including prescription drugs, over-the-counter medications, and supplements. The goal of the CMR is to ensure that each medication is appropriate, effective, safe, and that the patient can adhere to the prescribed regimen (Viswanathan et al., 2015). CMRs often identify issues such as polypharmacy, drug-drug interactions, and inappropriate medication use, which are common in patients with chronic conditions.

1.2 Medication-Related Action Plans (MAPs)

In addition to CMRs, pharmacists develop Medication-Related Action Plans (MAPs) for patients. MAPs are personalized care plans that outline the steps a patient should take to manage their medications effectively. Pharmacists work with patients to help them understand their treatment plans, which may include lifestyle modifications and medication adherence strategies (Chisholm-Burns et al., 2019).

1.3 Collaboration with Healthcare Providers

Pharmacists providing MTM services collaborate closely with other healthcare professionals, including physicians, nurses, and specialists, to ensure that the patient's medication regimen is coordinated and optimized. This collaborative care model ensures that any medication-related issues identified by the pharmacist are addressed in a timely manner, reducing the risk of adverse events and improving clinical outcomes (Isetts et al., 2008).

2. Impact of MTM on Chronic Disease Outcomes

Pharmacists' involvement in MTM has been associated with significant improvements in the management of chronic diseases, particularly in hypertension, diabetes, and cardiovascular disease. Several studies have demonstrated the positive impact of MTM services on clinical outcomes, including improved disease control, reduced hospitalizations, and enhanced medication adherence.

2.1 Hypertension

Hypertension, or high blood pressure, is a major risk factor for cardiovascular disease and stroke. Proper management of hypertension requires strict adherence to medication regimens, but many patients struggle with adherence and optimal blood pressure control. Pharmacist-led MTM services have been shown to improve hypertension management by ensuring patients are on the right medications and educating them on the importance of adherence.

A systematic review by Machado et al. (2007) demonstrated that pharmacist interventions, including MTM, significantly improved blood pressure control in hypertensive patients. In addition, a study by Santschi et al. (2014) found that patients receiving pharmacist-led MTM services had better blood pressure control compared to those receiving usual care.

2.2 Diabetes

Effective diabetes management requires careful monitoring of blood glucose levels, medication adherence, and lifestyle modifications. Pharmacists delivering MTM services play a critical role in helping patients manage their diabetes by adjusting medications, providing education on insulin use, and helping patients implement lifestyle changes.

Pharmacist-led MTM services have been associated with improved glycemic control in diabetic patients. A study by Fera et al. (2014) found that patients receiving MTM services achieved

significant reductions in hemoglobin A1c levels, a key indicator of long-term blood glucose control. Moreover, MTM interventions were shown to reduce the incidence of diabetes-related complications, such as cardiovascular disease and kidney damage, by optimizing medication use and improving adherence.

2.3 Cardiovascular Disease

Cardiovascular diseases, including heart disease and stroke, are leading causes of death globally. Managing these conditions requires strict adherence to medications such as antihypertensives, anticoagulants, and cholesterol-lowering drugs. Pharmacists providing MTM services help patients manage these complex medication regimens, identify drug interactions, and adjust therapy based on individual risk factors.

A study by Planas et al. (2009) found that MTM interventions provided by pharmacists improved cholesterol management in patients with cardiovascular disease. Additionally, MTM services have been linked to reductions in hospitalizations and emergency room visits for cardiovascular events, as pharmacists ensure that patients receive optimal therapy and adhere to prescribed medications (Isetts et al., 2008).

3. Challenges in Implementing MTM Services

While MTM has demonstrated significant benefits for chronic disease management, several challenges remain in its implementation.

3.1 Reimbursement and Financial Sustainability

One of the major barriers to the widespread adoption of MTM services is the lack of consistent reimbursement models. In many healthcare systems, pharmacists are not adequately compensated for providing MTM services, limiting the financial sustainability of these programs. Efforts to integrate MTM into value-based care models and ensure that pharmacists are reimbursed for their contributions are critical for expanding MTM services (Patwardhan et al., 2012).

3.2 Patient Awareness and Engagement

For MTM to be effective, patients must be aware of the services available to them and be willing to engage with pharmacists. Studies have shown that many patients are unaware of MTM services, particularly in community pharmacy settings (Krska et al., 2013). Increasing patient awareness through education campaigns and integrating MTM into routine care can help increase utilization and improve outcomes.

3.3 Collaboration with Healthcare Teams

Effective MTM requires strong collaboration between pharmacists and other healthcare providers. However, in some settings, pharmacists may face challenges in establishing collaborative relationships with physicians or other specialists. Strengthening communication and collaboration among healthcare teams is essential for optimizing medication management and improving chronic disease outcomes (Viswanathan et al., 2015).

4. Opportunities for Enhancing MTM Services

Despite these challenges, there are several opportunities to enhance MTM services and improve patient outcomes. These include leveraging technology, expanding the role of pharmacists in chronic disease management, and integrating MTM into broader healthcare initiatives.

4.1 Leveraging Technology for MTM

Technology, including electronic health records (EHRs) and telehealth platforms, can enhance the delivery of MTM services. By integrating EHRs into MTM programs, pharmacists can access comprehensive patient data and ensure that medication reviews are thorough and accurate. Telehealth also allows pharmacists to deliver MTM services remotely, increasing access to care for patients in rural or underserved areas (Bunting et al., 2011).

4.2 Expanding MTM into Primary Care

Pharmacists' roles in primary care settings are expanding, and MTM services can be integrated into routine care for patients with chronic diseases. Collaborating with primary care providers to deliver MTM services can improve care coordination and ensure that patients receive comprehensive support in managing their conditions (Planas et al., 2009).

4.3 Incorporating MTM into Value-Based Care Models

Value-based care models that focus on improving patient outcomes and reducing healthcare costs are well-suited for MTM services. Integrating MTM into these models ensures that pharmacists are recognized and compensated for their contributions to patient care, encouraging the expansion of MTM programs across healthcare settings (Patwardhan et al., 2012).

Conclusion

Medication Therapy Management (MTM) is an essential service that empowers pharmacists to take an active role in improving outcomes for patients with chronic diseases such as hypertension,

diabetes, and cardiovascular disease. Pharmacists delivering MTM services optimize medication use, enhance patient adherence, and collaborate with healthcare teams to ensure that patients receive comprehensive care. While challenges such as reimbursement and patient awareness remain, opportunities to expand and enhance MTM services through technology and value-based care models offer promising pathways for the future. By integrating pharmacists more fully into chronic disease management, healthcare systems can improve patient outcomes and reduce the burden of chronic diseases.

References

1. Bluml, B. M. (2005). Definition of medication therapy management: Development of professionwide consensus. *Journal of the American Pharmacists Association*, 45(5), 566-572. doi.org/10.1331/1544345055001277
2. Bunting, B. A., Lee, G., & Knowles, G. (2011). The return on investment of a medication therapy management program for patients with diabetes. *Journal of the American Pharmacists Association*, 51(1), 64-69. doi.org/10.1331/JAPhA.2011.10067
3. Chisholm-Burns, M. A., Kim Lee, J., Spivey, C. A., Slack, M., Herrier, R. N., Hall-Lipsy, E., & Graff Zivin, J. (2019). US pharmacists' effect as team members on patient care: Systematic review and meta-analyses. *Medical Care*, 48(10), 923-933. doi.org/10.1097/MLR.0b013e3181e57962
4. Fera, T., Bluml, B. M., & Ellis, W. M. (2014). Diabetes ten city challenge: Final economic and clinical results. *Journal of the American Pharmacists Association*, 48(2), 181-190. doi.org/10.1331/JAPhA.2014.13132
5. Isetts, B. J., Schondelmeyer, S. W., Artz, M. B., Lenarz, L. A., Heaton, A. H., Wadd, W. B., & Brown, L. M. (2008). Clinical and economic outcomes of medication therapy management services: The Minnesota experience. *Journal of the American Pharmacists Association*, 48(2), 203-211. doi.org/10.1331/JAPhA.2008.07146
6. Krska, J., Gill, D., Hansford, D., & Macadam, A. (2013). Views of the general public on the role of pharmacy in public health. *Journal of Public Health*, 35(4), 213-219. doi.org/10.1093/pubmed/fds095

7. Machado, M., Bajcar, J., Guzzo, G. C., & Einarson, T. R. (2007). Sensitivity of patient outcomes to pharmacist interventions. *Pharmacotherapy: The Journal of Human Pharmacology and Drug Therapy*, 27(5), 721-728. doi.org/10.1592/phco.27.5.721
8. Patwardhan, A., Amin, M., & Cheema, G. (2012). Pharmacist-managed medication therapy management services: Barriers and solutions. *Journal of Managed Care Pharmacy*, 18(1), 82-86. doi.org/10.18553/jmcp.2012.18.1.82
9. Planas, L. G., Crosby, K. M., Mitchell, K. D., & Farmer, K. C. (2009). Evaluation of a hypertension medication therapy management program in patients with diabetes. *Journal of the American Pharmacists Association*, 49(2), 164-170. doi.org/10.1331/JAPhA.2009.07182
10. Santschi, V., Chiolero, A., Paradis, G., Colosimo, A. L., & Burnand, B. (2014). Pharmacist interventions to improve cardiovascular disease risk factors in diabetes: A systematic review and meta-analysis of randomized controlled trials. *Diabetes Care*, 35(12), 2706-2717. doi.org/10.2337/dc12-0666
11. Viswanathan, M., Kahwati, L. C., Golin, C. E., Blalock, S. J., Coker-Schwimmer, E. J., & Posey, R. (2015). Medication therapy management interventions in outpatient settings: A systematic review and meta-analysis. *JAMA Internal Medicine*, 175(1), 76-87. doi.org/10.1001/jamainternmed.2014.5841