



## Medication management in physical therapy: the contribution of pharmacy technicians to patient safety and adherence

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### Abstract

Medication management is a crucial aspect of patient care in physical therapy, as it plays a significant role in managing pain, inflammation, and other symptoms that may hinder rehabilitation progress. The collaboration between physical therapists and pharmacy technicians is essential to ensuring patient safety and adherence to prescribed medications. Technician pharmacists play a vital role in the medication management process by assisting in the preparation, dispensing, and monitoring of medications for physical therapy patients. They work closely with physical therapists to ensure that the prescribed medications are appropriate for the patient's condition and are administered correctly. By working collaboratively, physical therapists and pharmacy technicians can help prevent medication errors, drug interactions, and adverse effects that may compromise patient safety. pharmacy technicians also play a key role in educating patients about their medications, including proper dosage, administration techniques, and potential side effects. Overall, the contribution of pharmacy technicians to medication management in physical therapy is essential for promoting patient safety and adherence to treatment plans.

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**Keywords:** medication management, pharmacy technicians, patient safety

### Introduction

Medication management in physical therapy is a critical aspect of patient care that requires collaboration between physical therapists and pharmacy technicians to optimize treatment outcomes. Several studies have explored the role of medication management in physical therapy,

focusing on various aspects such as: medication adherence, safety, and effectiveness (**Rahayu et al., 2021**).

Medication therapy management (MTM) a comprehensive services are a way for healthcare professionals, including pharmacists, to help patients and caregivers achieve better therapeutic outcomes while spending less on medical care. It is made up of a range of collaborative, pharmacist-provided, patient-centered services that are oriented on pharmaceutical safety, efficacy, appropriateness, and adherence with the aim of enhancing health outcomes (**Stefanie et al., 2020**).

MTM includes a number of elements, such as: Thorough medication review: Evaluating a patient's prescription regimen to make sure the recommended medications are suitable, efficient, secure, and easy to use. Action plan for medication: recognizing and resolving issues with medications, such as dose modifications, adverse effects, and drug interactions. Patient education and counseling: Helping patients comprehend the potential adverse effects, appropriate dosage methods, significance of adherence, and their drugs. Coordination and follow-up: Working together with pharmacists and medical professionals to track patients' progress and modify treatment regimens as needed (**Northwest Suburban College, 2023**).

One fundamental practice concern when offering a public service is making sure patients are safe. A facet of safety concerns the function of pharmacy technicians and physical therapists in assessing and analyzing a patient's present state and taking into account the possible influence of prescribed medications on the treatment plan. Physical therapy plays a crucial role in enabling patients to preserve and enhance their functional capability. Therefore, it is important to take into account factors that could affect the treatment's ultimate result (**Janes et al., 2019**).

By 2030, there will be 73 million people in the US who are 65 years of age or older, or 20% of the country's overall population. Many people in this age bracket have various chronic conditions as the population grows. The National Center for Health Statistics reports that 92% of people 65 and older have taken at least one prescription drug, and 43% have taken at least five prescription drugs in the past 30 days. Poly-pharmacy, which is commonly defined as taking five or more drugs, increases the risk of drug interactions, adverse drug events, non-adherence, and reduced functional capacity. As the population grows, many patients in this age group have multiple chronic conditions that may require multiple medications (**National Center for Health Statistics, 2017**).

Pharmacy technicians carry out a variety of tasks to support pharmacists and help patients with their prescription needs, making them invaluable in healthcare environments. drug Therapy Management (MTM), a crucial aspect of pharmacy practice that leverages the skills of Pharmacy Technicians, is a patient-centered strategy to maximize drug use and guarantee favorable results. MTM services are critical for patient safety, adherence, and general health, particularly for those with complicated prescription regimens or long-term medical issues (**Northwest Suburban College, 2023**).

Assisting with many facets of medication therapy management, pharmacy technicians operate under the guidance of a pharmacist to guarantee exceptional patient care. Pharmacy technicians

make significant contributions to MTM services, such as: drug Administration Records: Pharmacy technicians are responsible for keeping track of and updating drug administration records, making sure the pharmacist has access to correct and current information. Medication Reconciliation: Pharmacy Technicians are able to gather and confirm patient medication histories, pointing out any possible inconsistencies or problems with the medications (**Gernant et al., 2018**).

Additionally, pharmacy technicians help with patient communication and education. As the patient's initial point of contact, they can reinforce adherence strategies, answer routine questions about patients' medications, and provide crucial education on medication use and storage. Care Coordination: Pharmacy technicians can help with communication, care coordination with other medical professionals, and making sure patients have timely access to pharmaceutical therapy services. Pharmacy technicians have a major influence on the effectiveness of MTM services and patient outcomes by utilizing their knowledge of medications and patient needs (**Sardo, 2023**).

Furthermore, the pharmacy technician would update the patient's medication list by removing any prescriptions—like antibiotics—that have been finished. The most recent prescription list and any forms needed to be completed for the third-party MTM program would then be printed. The pharmacist then has access to this chart ahead of the patient's appointment, allowing for review. The last area the technician can play a role in is patient billing. Some third-party payers have online billing procedures and others require paper billing (**Ernzen, 2024**).

## **The review**

### **1. Objective**

This study aimed to highlights and characterize literature describing pharmacy technicians' contribution in actions commonly undertaken in the provision of Medication Management in physical therapy services.

### **2. Design**

Six databases (MEDLINE, CINAHL Plus, EMBASE, AMED, PsycINFO, and Sociological Abstracts) were searched for relevant articles published between 2014 and April 2024. Eight manuscripts were included that met the inclusion criteria according to the authors.

### **3. Methodology**

Six electronic databases— (MEDLINE, CINAHL Plus, EMBASE, AMED, PsycINFO, and Sociological Abstracts) —were thoroughly and methodically searched. Articles retrieved were initially reviewed for relevance by title and abstract for inclusion of pharmacy technician collaboration, patient safety, treatment adherence, and medication therapy management. After duplicate articles were removed, the remaining articles were analyzed per the inclusion and exclusion criteria within the full text. The author working independently, screened titles and abstracts and identified potentially relevant full-text articles for review. Included articles'

reference lists also were hand searched, and full-text articles were sought where there was insufficient information in the title or abstract.

#### **4. Study selection**

According to the inclusion criteria listed in Table 1 below, all of the selected studies that were included in this systematic review had to meet certain requirements

**Table 1. Inclusion/Exclusion Criteria.**

Inclusion Criteria	Exclusion Criteria
Qualitative studies, including grounded theory, ethnography, phenomenology, case study, and narrative analysis	Reviews, expert opinion, Comments, editorials, letters, and conference proceedings
Hospital setting	Not written in the English Language
Written in English	Published earlier than 2014
adherence and patient safety as an outcome	
Published between 2014 and 2024 (to capture a broad range of research on our topic within the last decade)	

#### **5. Data Extraction and Quality Assessment**

Data extracted included the study authors and year, the aim of the study, the qualitative method used, data collection methods, participant characteristics, and study settings. Either direct participant quotes or author text were extracted where appropriate to support the themes synthesized in this review, and quotes are denoted accordingly. Key themes, any explanatory models or theories developed, and implications for policy and practice were also extracted where available. Quality assessment of included studies was conducted using standardized tools appropriate for respective study designs. A narrative synthesis of findings from the included studies was performed.

#### **Results**

The research that are covered were released in 2014 and 2024. A total of 235 articles were found. The abstracts of 113 papers were evaluated after duplicates were eliminated. After 44 papers were evaluated for eligibility, 8 studies—5 of which were qualitative, 2 of which were case studies and 1 of which was narrative analysis—were included in the review.

A total of eight articles were present. The assistance provided by pharmacy technicians with medication therapy evaluation (37.5%), documentation (75%) and medication reconciliation (100%), was most frequently mentioned in manuscripts. The actions that were least likely to be reported were creating a personal medication record (12.5%), doing a physical examination

(0%), following up (12.5%), education (12.5%), adherence (12.5%), and creating a medication action plan (0%). There were no articles from Asia, Africa, or the Middle East. The majority of articles were authored in the United States (37.5%), followed by UK (25%), Canada, Swiss, and Australia (12.5%) table (2).

**Table 2. Assistance provided by pharmacy technicians**

Study	Design	Setting	Assistance provided
Niederhauser et al (2018)	Qualitative study	Internal medicine unit, Swiss hospital	medication reconciliation
Concepcion et al (2021)	observational case series study	Acute adult inpatient hospital ward of a mental health unit, UK hospital	medication reconciliation, documentation, follow-up intervention
Seston et al (2019)	Qualitative study	Wards, England	medication reconciliation, creating a personal medication record
Keller et al (2015)	Qualitative study	Wards, USA	medication reconciliation, documentation, medication therapy evaluation
Pope et al (2021)	Qualitative study	Internal medicine unit, USA	medication reconciliation, documentation, medication therapy evaluation
Koehler et al (2016)	narrative analysis	Australia	medication reconciliation, documentation, medication therapy evaluation
Borchert et al (2019)	Qualitative study	USA	medication reconciliation, patient/caregiver education, patient adherence, documentation

Study	Design	Setting	Assistance provided
Houle et al (2014)	observational case series study	Canada	medication reconciliation, patient/caregiver education, patient adherence, documentation

## Discussion

Pharmacy technicians use their knowledge and abilities to support quality patient care in a variety of healthcare settings and to help medication management initiatives succeed. They play a vital role in the provision of medication management services, directly influencing patient outcomes as well as medication safety and adherence (**College of Medicine and Science, 2023**).

A literature review by Beckett et al. (2018) highlighted the importance of interdisciplinary collaboration between physical therapists and pharmacy technician in managing medications for patients undergoing physical therapy. The study emphasized the need for pharmacy technicians to provide expertise in medication management, including assessing drug interactions, monitoring side effects, and ensuring proper medication dosing.

Another study by Jones et al. (2019) investigated the role of pharmacy technicians in medication management for patients undergoing physical therapy. The importance of pharmacy technicians in assisting with medication dispensing, patient education, and monitoring medication adherence to support the overall treatment plan.

Moreover, a review by Johnson et al. (2020) explored the challenges and opportunities associated with medication management in physical therapy, emphasizing the need for pharmacy technicians to work collaboratively to address medication-related issues and optimize patient care.

Furthermore, a review by Chamberlain et al. (2020) who conducted a study about Pharmacy Technicians' Roles and Responsibilities in the Community Pharmacy Sector: A Welsh Perspective, and concluded that There is a scope to enable community pharmacy technicians to optimize and further develop their roles. Enablers include the effective use of delegation, workplace support, improved staffing levels and the prioritization of extended pharmacy technician roles.

Overall, the literature highlights the significance of medication management in physical therapy and underscores the importance of interdisciplinary collaboration between physical therapists and pharmacy technicians by working together, to ensure safe and effective medication use,

improve patient outcomes and safety, and enhance the quality of care provided to individuals undergoing physical therapy

### **Limitation**

Qualitative synthesis may be difficult to replicate. The majority of articles were from America and UK, limiting transferability of the findings.

### **Conclusion**

Pharmacy technicians are utilized most often to support MTM through assistance in medication reconciliation. Standardized training for pharmacy technicians that delineates administrative support from pharmacists' role of clinical decision making could help pharmacists obtain greater efficiency in MTM delivery.

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