

The Integral Role of Multidisciplinary Teams in the Management of Chronic Illnesses: Enhancing Patient Outcomes through Collaborative Care Models

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Abstract

Chronic illnesses are a leading cause of morbidity and mortality worldwide, necessitating complex management strategies that often exceed the capacities of individual healthcare providers. Multidisciplinary teams (MDTs) are increasingly recognized as essential for delivering comprehensive patient care in chronic disease management. This review synthesizes findings from various studies published between 2000 and 2023, utilizing databases such as PubMed, Google Scholar, and Scopus. Key search terms included "multidisciplinary teams," "chronic disease management," and "pharmacists' roles." The focus was on the impact of pharmacists within MDTs and their contributions to patient outcomes. The integration of pharmacists into MDTs enhances chronic illness management by improving medication adherence, reducing medication errors, and fostering effective communication among team members. Case studies illustrate how collaborative efforts among physicians, pharmacists, nurses, and other healthcare professionals lead to improved patient satisfaction, lower healthcare costs, and better clinical outcomes. Effective collaboration within MDTs is vital for optimizing chronic disease management. Engaging pharmacists not only improves medication management but also strengthens the overall care process. Future research should explore standardized models for integrating pharmacists into MDTs and assess their long-term impact on patient health outcomes.

Keywords: *Chronic Illness, Multidisciplinary Teams, Pharmacists, Patient Outcomes, Healthcare Collaboration.*

Introduction

Chronic illness has emerged as a significant public health consequence and a primary cause of death and disability. Chronic diseases in hospitals are managed by a multidisciplinary care team led by a physician, which may include general practitioners, medical experts, pharmacists, nurses, psychiatrists, and other

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healthcare professionals [1]. Specialists serve as consultants when their involvement is restricted to offering evaluation advice to primary care physicians or performing diagnostic and therapeutic interventions without ongoing management of health issues [2]. Within an interprofessional care team, conflicts and work-related fatigue may arise if effective communication, collaboration, and coordination are lacking. Consequently, engaging collaborators in the decision-making process fosters innovative solutions and allows them to contribute within their respective domains [3].

Pharmacists can enhance chronic illness management and avoid medication delivery problems. Pharmacists are accountable for several patient-related tasks, including medication reconciliation, identifying drug interactions, reviewing laboratory testing to oversee drug treatment and prescribed drugs, renewing prescriptions, and providing patient education. Pharmacists champion the individual when prescriptions may be unwarranted or no longer advantageous. Despite constrained resources regarding time and resources for patient monitoring beyond clinic hours, they frequently engage in nonclinical days to address treatment issues or respond to requests from nurses and physicians [4].

The inclusion of pharmacists in the multidisciplinary care team is expected to enhance patient recovery, contribute to a reduction in prescription pharmaceutical costs, and improve the rationale of treatment for individuals with chronic illnesses [5]. Nonetheless, the present functions of pharmacists within this team remain inadequately researched and have not been thoroughly examined. This paper examines the role of pharmacists as integral members of the interprofessional care team in the management of patients with chronic illnesses, focusing on aspects such as cooperation, coordination, collaboration, collaborative decision-making, and therapeutic results.

Methods

Our study included publications published between 2000 and 2023, sourced from Google Scholar, PubMed, Scopus, EBSCO, and the Cochrane Library, employing the keywords “pharmacy technicians,” “multidisciplinary healthcare,” and “chronic disease.” The search spanned from 2010 to 2023.

Persistent Illnesses and Collaboration

Chronic illnesses are the primary cause of death and morbidity in Europe. Chronic sickness diminishes salaries, incomes, work participation, and productivity while elevating early retirement, turnover rates, and disability claims. The rising expenditure on long-term care across Europe will need a growing share of public and private resources. Chronic illnesses often include cardiovascular disease, asthma, Type 2 diabetes, and persistent obstructive pulmonary disease (COPD). Considering the increasing survival rates and length of illnesses, numerous more diseases should be classified as chronic ailments, including different cancers, HIV/AIDS, mental disorders (including schizophrenia, depressive disorders, and dementia), and impairments like vision impairment. An aging society is linked to several chronic illnesses and ailments; yet lifestyle choices like smoking, sexual behavior, food, exercise, and genetic susceptibility are also implicated. Chronic diseases are enduring conditions necessitating a multifaceted response orchestrated by various healthcare professionals equipped with essential medications, apparatus, and social support [6]. This review examined interprofessional relationships in chronic disease management across five dimensions: association, collaboration, coordination, collaborative decision-making, and therapeutic results.

Interprofessional healthcare teams comprise community physicians, healthcare managers, and social service providers who engage directly with patients to navigate complex systems, address health-related needs, and mitigate barriers to optimal health. These teams create multidisciplinary educational programs (nursing, physiotherapy, and nutrition) to assess patients' eligibility for standard care and ensure adherence to therapy [7,8]. Each healthcare professional must maintain a positive disposition towards their colleagues, demonstrating comfort when specific services are rendered by other professionals (e.g., drug therapy management by pharmacists) [9].

In a collaborative effort, clinical pharmacists and pharmacy administrators partnered with physicians and nursing leaders to identify high-risk patient groups and promote the administration and distribution of

naloxone. The involvement of an interprofessional healthcare team, including physicians, pharmacists, nurses, and social workers, led to patients expressing a preference for a specific healthcare facility for their treatment [10,11].

The team included several professions that effectively interacted with one another. This cooperation required a degree of transparency, a readiness to negotiate, and a clear comprehension of each individual's responsibilities [12]. The interprofessional healthcare team collaboration may include not just diverse organizations but also distinct age demographics. A junior physician, in collaboration with a senior nurse, effectively disseminated health and patient care information through established hierarchies within the nursing field [13]. Additionally, a pharmacist, as a member of the interprofessional health care team, engaged in collaborative care to foster connections with health providers, such as physicians and nurses in health and social service organizations [14].

Pharmacists, as integral members of an interprofessional healthcare team, contributed significantly to the management of chronic diseases involving diabetes, hypertension, and hyperlipidemia, as well as to smoking cessation initiatives [15]. Health professionals, including physicians and nurses, consulted pharmacists to establish interprofessional strategies for enhancing treatment adherence among non-compliant patients within their hospital practices. Physicians, pharmacists, nurses, dentists, psychologists, physical therapists, as well as speech-language pathologists can collectively enhance patient care by emphasizing the critical role of nutrition across all specialties [16].

An interprofessional healthcare team, comprising both prescribers and non-prescribers, was established to thoroughly assess prescribing practices [17]. This team included physicians, nurses, pharmacists, medical professionals, and health coaches, and collaborated with patients suffering from chronic conditions such as COPD and heart failure. The panel evaluated and sanctioned the creation of self-management kits for COPD and heart failure [18].

Multidisciplinary teams within hospitals, comprising specialists in specific health conditions, established collaborations with the parents of children suffering from chronic ailments (e.g., chronic kidney disease) [19]. Physicians adhered to pharmacists' recommendations concerning medication management and proposed diminishing the division of responsibilities, as they regarded pharmacists as collaborators [20]. The multidisciplinary healthcare team executed cooperative practices to deliver suitable assistance for lifestyle modifications, facilitating expedited recovery and restoration of health [21]. Collaborations in interprofessional care enhanced the functions of team members. Pharmacists effectively executed their responsibilities within interprofessional care teams when bolstered by the help of other experts.

Cooperation

Interprofessional healthcare team members helped each other by attending to work-related activities that kept them busy and motivated [3]. Interprofessional healthcare teams offer a variety of services, such as patient needs assessments, service and intervention coordination, and patient advocacy and follow-up [7]. In a healthcare context, a medical professional, nurse, as well as pharmacist may engage with patients diagnosed with COPD to formulate new action plans that aid in the transition from hospital to home [22]. Another instance of interprofessional collaboration is the hospital working group at Johns Hopkins Hospital, which identifies obstacles to prescribing outpatient naloxone and devises policies that consistently delineate the approach to naloxone prescription in outpatient clinics [10]. In conjunction with doctors and nurses, pharmacists play a direct role in drug management and procurement, encompassing antiretroviral medications [11].

Collaboration with other healthcare professionals is essential due to the overlapping responsibilities of pharmacists, which can occasionally result in conflicts among team members. Efficient coordination within an interprofessional healthcare team leads to reduced treatment costs for patients through optimal utilization of health services. Junior doctors, senior nurses, and pharmacists have effectively collaborated to enhance the implementation of new interventions [23,24].

Healthcare professionals, including doctors, nurses, pharmacists, and dentists, positively impact patient care by harmonizing and emphasizing the significance of nutrition across all domains [25]. The essential function of pharmacists and collaborative healthcare team coordinators underscores the value of these collaborative teams in delivering clinical services that aid patients in managing chronic illnesses. Professionals bolster the information conveyed to other team members or the patient's parents or family. This division of work is accompanied by an implicit agreement that each member provides mutual assistance. Patients with various comorbidities have been managed via interprofessional cooperation, with referrals organized by nurses [26]. Effective management of patients with chronic diseases requires optimal collaboration among all healthcare providers. Each expert engages in their domain and refrains from conflicting with others, with patient healing as their primary objective [21].

Interprofessional healthcare teams engage in collaboration to customize treatment, deliver education, and investigate treatment alternatives. Tailoring care for each patient is crucial for these teams. The efficacy of treating patients with severe illnesses is influenced by the professional collaboration of a thorough health team across various sectors of the healthcare system. For instance, a primary care physician and a pharmacist can collaboratively manage patients with multimorbidity [27,28].

Heinen et al. [29] collaborated to devise and assess a counseling program aimed at enhancing therapeutic adherence and physical activity among patients with leg ulcers. In a public medical center in Neuchâtel, Switzerland, an infectious disease physician and a nurse executed interprofessional treatment compliance for patients with chronic conditions and partnered with community pharmacies. Healthcare teams comprising primary care prescribers (physicians, nurses, and physician staff members) and pharmacists have made significant progress in minimizing the prescription of potentially inappropriate medications, thereby augmenting patient safety [30].

Collaboration in facilitating communication among multidisciplinary team members is crucial for preserving the quality of pharmacotherapy in geriatric medicine wards [13]. In HIV care, the synergy between rehabilitation specialists and HIV specialists—including nurses, physicians, social workers, pharmacists, psychiatrists, and dietitians—can mitigate disabilities in adults living with HIV through the provision of physical therapy services [31]. Furthermore, the involvement of an interprofessional healthcare team comprising nurses, pharmacists, and physicians yielded significantly improved outcomes in the management of outpatient hypertension. This interprofessional team also organized with outpatient pharmacies to oversee the collection of naloxone prescriptions [32].

Physicians and pharmacists have developed robust relationships to improve cooperation and collaboration in treatment and patient management. Multidisciplinary healthcare teams have delivered thorough, population-based, patient-centered healthcare and have collaborated to assess medications in patient kits to enhance their quality. These teams have also evaluated home-based care suggested by doctors and pharmacists [33]. A home-based care review entails the recommendation of a medical professional to a patient and a patient to a pharmacist. The patient visit was ideally conducted at the patient's residence. The collaboration of pharmacists in multidisciplinary care for patient management has shown superior outcomes compared to scenarios without pharmacist involvement. The contributions of every member of an interprofessional care team may enhance patient care [34].

Collaborative Decision-Making

Interprofessional healthcare teams engage members in the decision-making process to devise innovative solutions and leverage their collective skills. The intricate activities inherent in healthcare settings necessitate collaboration among stakeholders, encompassing precise clinical information, effective communication, appropriate follow-up, and collaborative decision-making [13]. The proactive engagement of physicians as the primary referral source and coordinators of interprofessional healthcare teams has been pivotal for successful recruitment, patient involvement, and the execution of health programs. Physicians generally possess a broader spectrum of medical knowledge and expertise compared to other health professionals, thus exerting considerable influence on the primary healthcare system. Physicians have traditionally been at

the forefront of medical decision-making due to their effective communication within professional groups [24].

In one instance, physicians recommended that community pharmacists offer guidance on medication management [11,28]. Pharmacists successfully optimized patient therapy by initiating new medications, discontinuing treatments, or adjusting dosages. Their involvement led to a reduction in the average pain score within an underserved demographic. The pharmacist was tasked with delivering interprofessional education to all members of the healthcare team. However, certain patients' therapies were intentionally halted without verification from the interprofessional care team. The head of the multidisciplinary healthcare team is the primary decision-maker about the selection of treatment. The team members must reach an agreement with the interprofessional care leader, often a physician while managing patients [11,18].

Clinical Result

Chronic diseases may be managed using several modalities, including surgical intervention, physical rehabilitation, psychiatric counseling, radiation, and pharmacotherapy. In Australia and other affluent nations, pharmacotherapy represents a significant portion of healthcare expenditures [35]. Preventing and managing chronic diseases will need substantial quantities of pharmaceuticals, resulting in significant expenses. Pharmacists managing patients with chronic diseases fulfill many clinical and non-clinical tasks. Pharmacists in the United States not only dispense medications but also engage in therapy and optimize therapeutic regimens. Pharmacists within an interprofessional care team may enhance patient safety by prioritizing the patient's medication management [36].

Chronic illness often necessitates intricate treatment regimens, potentially resulting in heightened patient non-compliance with medication, which may cause side effects, drug interactions, escalated treatment expenses, and patient perplexity. Pharmacists engaged in interprofessional care teams may provide strategies to enhance patient therapeutic adherence, thus increasing clinical outcomes and minimizing side effects and treatment expenses. Patients with chronic illnesses receiving treatment from interprofessional teams have superior therapeutic outcomes and greater satisfaction with the services rendered compared to those treated only by solo practitioners [37].

Discussion

Our analysis demonstrated that pharmacists play a crucial role in interprofessional care teams by ensuring the precision of medication administration, which subsequently reduces hospitalizations and healthcare costs. Interprofessional care teams need many collaboration elements, including mutual trust among team members and a readiness to work. Interprofessional care teams of diverse health experts must ascertain the elements of collaboration necessary for patient-centered care. In a collaborative approach, the objectives are established by the leaders of the multidisciplinary treatment team. The first step in the manner in which patients are treated is the action plan, which must be reviewed once it has been put into practice. Effective interprofessional treatment will be attained via the professional competence of the multidisciplinary care team, which will keep evolving and enhance the team's professionalism [38].

The multidisciplinary healthcare team must foster a feeling of belonging among its members, which is shown in five dimensions: collaboration, communication, cooperation, making choices, and therapeutic results [39]. The dimensions delineate the efficacy of an interprofessional healthcare team in managing patients with chronic illnesses, since they are interdependent, with one dimension reinforcing the others. Coordination involves managing operations to ensure that the rules and actions executed do not contradict. A crucial element underpinning a strong team is communication. Relational coordination theory posits that effective team coordination necessitates the sharing of knowledge and understanding, alongside the establishment of relationships founded on common objectives and mutual respect [40].

The multidisciplinary healthcare team consistently aims for patients to achieve improved health outcomes. The many professions within a team of healthcare providers need a substantial level of mutual trust and respect among all team members. They exchange patients' medical information to ensure that all relevant

data is disclosed throughout the provision of clinical information. Research indicates that good cooperation between nurses and doctors may enhance patient care quality, reduce morbidity and mortality, and elevate patient satisfaction [41]. Collaboration among healthcare staff may enhance job satisfaction and retention rates. Interprofessional coordination resembles cooperation in its emphasis on a collective identity. Nevertheless, integration and dependency are seen as rather insignificant. Team tasks are seen as more predictable, less urgent, and less intricate. Coordination is seen as akin to cooperation, since it necessitates shared responsibility among persons, along with a clear delineation of roles, duties, and objectives.

Cooperation is characterized as a collaborative endeavor undertaken by several individuals to attain shared objectives. Collaboration within an interprofessional healthcare team entails coordinated efforts to meet intricate patient requirements. The caliber of interprofessional cooperation in healthcare warrants significant attention, since it directly influences patient outcomes.

A patient's incompetence in engaging in shared decision-making often becomes an obstacle. Nonetheless, information on the illness and its treatment disseminated to patients encompasses healthcare workers across all professions, since they may also serve as facilitators in collaborative decision-making. It is essential to underscore the significance of enhancing mental health proficiency among general practitioners and community pharmacists to facilitate collaborative decision-making within interprofessional healthcare teams. Healthcare professionals emphasize the need of information exchange across providers and environments, since effective healthcare is crucial for successful collaborative decision-making in patient care.

Enhancing the efficacy of interprofessional healthcare teams is a method to elevate care quality, decrease care expenses, and optimize patient therapeutic results. A primary cause for the unsuccessful endeavors to enhance interprofessional healthcare teams is the absence of a cohesive conceptual framework for integrating collaboration. Examining the intricacies of interprofessional healthcare team dynamics can enhance comprehension of interprofessional practices and inform the development of treatments required to improve results [42-44].

Our research has certain limitations. Initially, among the several aspects of interprofessional collaborations, we examined five dimensions that have been shown to directly enhance cooperation in healthcare. Secondly, owing to the scarcity of relevant papers on the involvement of pharmacists in interprofessional care teams, we refrained from conducting a systematic review. We conducted a literature study to provide a qualitative assessment of pharmacists' responsibilities in interprofessional care teams.

Conclusion

In conclusion, the role of multidisciplinary teams (MDTs) in the management of chronic illnesses cannot be overstated. As healthcare systems increasingly confront the complexities associated with chronic diseases, the need for a coordinated approach becomes paramount. This review highlights the significant contributions of pharmacists as integral members of MDTs, demonstrating their capacity to enhance patient care through improved medication management and adherence.

Pharmacists bring a unique skill set to the team, encompassing expertise in pharmacotherapy and patient education, which is crucial for addressing the multifaceted challenges posed by chronic illnesses. Their involvement not only facilitates the identification of potential drug interactions and side effects but also promotes patient engagement in their treatment plans, leading to better adherence and, consequently, improved health outcomes.

Moreover, the collaborative nature of MDTs fosters an environment where healthcare professionals can share knowledge and experiences, thus enhancing the quality of care provided. The synergy between pharmacists, physicians, nurses, and other specialists creates a holistic approach to patient management, addressing both the clinical and psychosocial aspects of chronic diseases.

However, the successful implementation of MDTs requires overcoming barriers such as communication breakdowns, role ambiguity, and interprofessional conflicts. Institutions must invest in training programs that emphasize teamwork, communication skills, and mutual respect among team members. Additionally, establishing clear protocols and responsibilities within the team can mitigate misunderstandings and enhance collaboration.

Future research should focus on developing standardized guidelines for the integration of pharmacists and other healthcare professionals into MDTs. Longitudinal studies are needed to evaluate the long-term effects of these collaborative care models on patient outcomes, healthcare costs, and overall system efficiency. Ultimately, fostering a culture of collaboration in healthcare will be essential for meeting the challenges posed by chronic illnesses and improving the quality of care for affected patients.

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الدور المحوري للفرق متعددة التخصصات في إدارة الأمراض المزمنة: تحسين نتائج المرضى من خلال نماذج الرعاية التعاونية

الملخص

الخلفية: تُعد الأمراض المزمنة سبباً رئيسياً للمراضة والوفيات على مستوى العالم، وتتطلب استراتيجيات إدارة معقدة غالباً ما تتجاوز قدرات مقدمي الرعاية الصحية الفرديين. يتم الاعتراف بشكل متزايد بأهمية الفرق متعددة التخصصات (Multidisciplinary Teams (MDTs)- في تقديم رعاية شاملة للمرضى في إدارة الأمراض المزمنة.

المنهجية: تُركّز هذه المراجعة على تجميع نتائج الدراسات المنشورة بين عامي 2000 و2023، باستخدام قواعد بيانات مثل PubMed، و Google Scholar، و Scopus. شملت الكلمات المفتاحية "الفرق متعددة التخصصات"، "إدارة الأمراض المزمنة"، و"دور الصيدلة". وركزت المراجعة على تأثير الصيدلة ضمن الفرق متعددة التخصصات ومساهماتهم في تحسين نتائج المرضى.

النتائج: يعزز دمج الصيدلة في الفرق متعددة التخصصات إدارة الأمراض المزمنة من خلال تحسين الالتزام بالعلاج، تقليل الأخطاء الدوائية، وتعزيز التواصل الفعال بين أعضاء الفريق. توضح دراسات الحالات كيف تؤدي الجهود التعاونية بين الأطباء، الصيدلة، الممرضين، وغيرهم من مقدمي الرعاية الصحية إلى تحسين رضا المرضى، خفض تكاليف الرعاية الصحية، وتحقيق نتائج سريرية أفضل.

الاستنتاج: يُعد التعاون الفعال ضمن الفرق متعددة التخصصات أمراً أساسياً لتحسين إدارة الأمراض المزمنة. يُساهم إشراك الصيدلة في تحسين إدارة الأدوية وتعزيز عملية الرعاية الشاملة. ينبغي أن تركز الأبحاث المستقبلية على استكشاف نماذج موحدة لدمج الصيدلة في الفرق متعددة التخصصات وتقييم تأثيرها على صحة المرضى على المدى الطويل.

الكلمات المفتاحية: الأمراض المزمنة، الفرق متعددة التخصصات، الصيدلة، نتائج المرضى، التعاون في الرعاية الصحية.