
Implementing Pharmacist-Led Interventions in The Management of Depression

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Abstract:

Pharmacists are increasingly playing a vital role in the management of depression, leveraging their clinical expertise to enhance patient care and outcomes. Their involvement can range from medication management to patient counseling and education. By conducting comprehensive medication reviews, pharmacists can identify potential drug interactions, therapeutic duplications, and adherence issues, ensuring that patients receive the most effective treatment for their depression. Furthermore, they can monitor and manage side effects, adjusting treatment protocols as necessary and coordinating care with other healthcare professionals to create a holistic treatment approach. In addition to medication management, pharmacist-led interventions may include behavioral health screenings, follow-up monitoring, and the provision of resources for cognitive behavioral therapies. Training in motivational interviewing techniques allows pharmacists to better engage patients, helping them articulate their experiences and concerns regarding their mental health. Implementing these interventions not only helps improve patient adherence to prescribed treatments but also fosters a supportive environment for patients to discuss their mental health struggles. Ultimately, this collaborative care model aims to enhance treatment outcomes and reduce the stigma associated with depression, contributing to a more comprehensive healthcare system.

Keywords: Pharmacist-led interventions, depression management, medication management, patient counseling, comprehensive medication reviews, behavioral health screenings, treatment adherence, holistic treatment approach, cognitive behavioral therapy, motivational interviewing, collaborative care model.

Introduction:

The growing prevalence of mental health disorders, particularly depression, represents a significant challenge to healthcare systems worldwide. As of 2020, the World Health Organization (WHO) reported that more than 264 million individuals are estimated to be affected by depression globally, a figure that has been exacerbated by the COVID-19 pandemic and its associated stressors (WHO, 2021). The multifaceted nature of depression underscores the importance of comprehensive and multidisciplinary approaches in its management. Recently, an increasing body of evidence has highlighted the vital role that pharmacists can play in the optimization of care for patients suffering from depression. This research introduction aims to explore the rationale, evidence base, and implications of implementing pharmacist-led interventions in the management of depression [1].

Pharmacists possess a unique skill set that positions them as essential contributors to mental health care. With their extensive training in pharmacotherapy and patient management, pharmacists are equipped to execute clinical interventions that can enhance patient outcomes, reduce the burden on healthcare providers, and ensure the safe and effective use of antidepressant medications (Gonzalez et al., 2020). Their direct access to patients in various healthcare settings—including hospitals, outpatient clinics, and community pharmacies—grants them opportunities to conduct medication reviews, provide counseling, and deliver education on mental health. By addressing medication-related issues such as adherence, side effects, and drug interactions, pharmacists can directly influence treatment efficacy and patient satisfaction [2].

Pharmacist-led interventions can take various forms, including medication therapy management (MTM), collaborative practice models, and patient education initiatives designed to increase awareness of depression and its treatments. Evidence has shown that collaborative care models, in which pharmacists work alongside primary care providers and mental health professionals, can lead to significantly improved depression outcomes. A meta-analysis conducted by Schindler et al. (2019) found that interventions incorporating pharmacists in the management of depression resulted in greater reductions in depressive symptoms compared to traditional care alone. Likewise, studies have

demonstrated that pharmacist-led counseling sessions have led not only to improved medication adherence and reduced healthcare costs but also to increased patient empowerment and engagement in their treatment plans (Benedict et al., 2021) [3].

Furthermore, the importance of early intervention cannot be overstated. Pharmacists are often at the forefront of patient interaction, allowing them to identify symptoms of depression that may be missed in primary care visits. By implementing depression screening tools within their workflows, pharmacists can play a pivotal role in the early identification of depression, facilitating timely referrals for psychological support where appropriate. The integration of evidence-based screening instruments, such as the Patient Health Questionnaire-9 (PHQ-9), into pharmacy practice can foster a proactive approach to mental health care (Berger et al., 2020) [4].

Despite the considerable benefits of pharmacist-led interventions, barriers to their implementation remain. These obstacles can take the form of regulatory and reimbursement issues, a lack of established collaborative practice agreements, and insufficient training on mental health topics among pharmacists. Addressing these barriers requires a concerted effort from policymakers, healthcare organizations, and academic institutions to create an environment conducive to the integration of pharmacy services into mental health care. Training programs that enhance pharmacists' knowledge of psychiatric disorders and equip them with the tools necessary for effective patient communication are paramount to fostering success in this endeavor [5].

Furthermore, the evolving nature of healthcare delivery models presents an unprecedented opportunity for the expansion of pharmacist roles within mental health care. Telepharmacy and online consultations have gained immense popularity, particularly during the pandemic, and can be leveraged to reach a larger segment of the population struggling with depression. Innovative approaches, such as the use of digital health technologies and mobile health applications, can enhance the pharmacist's ability to monitor patients, provide ongoing support, and ensure adherence to treatment protocols [6].

In conclusion, the implementation of pharmacist-led interventions in the management of depression

offers a promising strategy to enhance patient care and outcomes in mental health management. The expertise of pharmacists, combined with a collaborative approach to healthcare, can address the growing mental health crisis and improve access to effective treatment options for patients suffering from depression. Future research must focus on developing robust models of care and overcoming existing barriers to implementation, thereby maximizing the potential benefits of pharmacist involvement in mental health care. By embracing this emerging role, pharmacists can contribute significantly to the holistic management of depression, ultimately leading to improved quality of life for affected individuals [7].

Pharmacists' Roles and Responsibilities in Depression Management:

Depression is a prevalent and often debilitating mental health condition that affects millions of individuals worldwide. Characterized by persistent sadness, loss of interest or pleasure in activities, changes in appetite, and various physical symptoms, depression can significantly impair an individual's quality of life and ability to function. While the treatment of depression primarily falls within the domain of psychiatrists, psychologists, and primary care providers, pharmacists are increasingly recognized as vital members of the healthcare team in managing this condition. Their roles extend beyond simply dispensing medications; they include patient education, medication therapy management, mental health screenings, and providing support for lifestyle modifications that can improve outcomes [8].

One of the primary responsibilities of pharmacists in depression management is the oversight and management of pharmacotherapy. Antidepressants, including selective serotonin reuptake inhibitors (SSRIs), serotonin-norepinephrine reuptake inhibitors (SNRIs), tricyclic antidepressants, and monoamine oxidase inhibitors, are commonly prescribed to treat depression. Pharmacists play a crucial role in ensuring that patients receive the appropriate medication and dosage based on their specific clinical profiles, including factors such as age, weight, existing comorbidities, and potential drug interactions [9].

Pharmacists are trained to assess the efficacy and safety of medications. They monitor patients for side

effects, therapeutic outcomes, and adherence to treatment regimens. Moreover, pharmacists can help identify when a medication is not working as intended, prompting discussions with prescribers about potential adjustments or alternatives. Their expertise in pharmacokinetics and pharmacodynamics allows pharmacists to offer valuable guidance on how to maximize the therapeutic benefit of medications, thereby enhancing patient outcomes in depressive disorders [10].

Beyond medication management, pharmacists are integral in educating patients about their condition and treatment options. This involves providing information on how antidepressants work, the expected timeline for effect, potential side effects, and the importance of adherence to prescribed therapies. Education is essential not only for enhancing medication compliance but also for alleviating common concerns such as stigma surrounding mental health issues and fear of treatment [11].

Pharmacists can employ motivational interviewing techniques to engage patients and help them understand their treatment plans better. They can assist in setting realistic goals and expectations, fostering an environment where patients feel comfortable discussing their challenges and progress. This supportive atmosphere can improve patients' willingness to ask questions and express concerns, ultimately leading to better clinical outcomes [12].

Pharmacists are well-positioned to conduct mental health screenings as part of routine pharmacy services. By utilizing validated screening tools such as the Patient Health Questionnaire-9 (PHQ-9), pharmacists can identify patients who may be suffering from depression but have not yet sought help. Screening in a pharmacy setting is often more accessible for patients who might be reluctant to visit a mental health professional or who may not have immediate access to such services [13].

Early identification of depression is crucial, as it allows for timely interventions that can significantly improve outcomes. When pharmacists identify patients at risk for depression, they can refer them to appropriate mental health services or collaborate with the healthcare team to ensure a coordinated approach to care.

Depression often coexists with other chronic conditions such as diabetes, cardiovascular disease, and obesity. Pharmacists can play a key role in managing these comorbidities, which can complicate the treatment of depression. By offering insights into how chronic diseases might affect the progression or management of depression, pharmacists help create comprehensive care plans that address the physical and mental health of patients [14].

Furthermore, pharmacists can provide valuable guidance on lifestyle modifications that can complement pharmacological treatments. Regular physical activity, a balanced diet, and adequate sleep are critical components of managing depression. By acting as wellness coaches, pharmacists can encourage patients to adopt healthier lifestyle habits, thereby enhancing their overall well-being and resilience against depressive symptoms [15].

As an integral part of the healthcare team, pharmacists collaborate with other healthcare professionals to ensure cohesive care for patients with depression. They can communicate with primary care physicians, psychiatrists, psychologists, and social workers, sharing important medication-related information and patient observations. This collaborative approach is essential for creating a unified treatment plan that addresses all aspects of a patient's health [16].

Pharmacists can also participate in case discussions during interdisciplinary meetings, providing insights into medication management and advocating for the patient's medication-related needs. By fostering strong communication and teamwork among healthcare providers, pharmacists contribute to improved patient outcomes and a holistic approach to mental health care [17].

Pharmacist-Led Medication Review and Optimization:

Depression is a complex, multifaceted disorder that affects millions of individuals worldwide, significantly impairing their quality of life and overall well-being. Pharmaceutical interventions remain one of the most pivotal aspects of managing depression, often involving the thoughtful use of antidepressants. However, the success of these medications can depend heavily on careful monitoring, adjustment, and comprehensive patient education. Given the rising prevalence of depression

and the increasing complexity of medication regimens, the role of pharmacists in managing and improving medication therapy for depressed patients is gaining recognition [18].

Depression is characterized by persistent sadness, loss of interest or pleasure in usual activities, and a range of emotional and physical issues, including fatigue, changes in appetite, sleep disturbances, and impaired concentration. While the etiology of depression is multifactorial, encompassing genetic, biological, environmental, and psychological factors, pharmacotherapy aims to correct neurotransmitter imbalances in the brain, specifically targeting serotonin, norepinephrine, and dopamine [18].

Several classes of antidepressants are frequently prescribed, including selective serotonin reuptake inhibitors (SSRIs), serotonin-norepinephrine reuptake inhibitors (SNRIs), tricyclic antidepressants (TCAs), and newer agents such as atypical antidepressants and monoamine oxidase inhibitors (MAOIs). While effective for many patients, these medications can also pose risks, including side effects, drug interactions, and issues with adherence. This complexity necessitates ongoing management and review, an area where pharmacists can provide essential support [19].

The Role of Pharmacists in Depression Management

Pharmacists have emerged as integral health care providers in the management of depression and other mental health disorders. Their expertise in pharmacotherapy and accessibility within healthcare systems enable them to offer personalized care in several ways:

1. Medication Review and Assessment:

Pharmacists can conduct comprehensive medication reviews (CMRs) to evaluate antidepressant regimens. In this process, they assess the appropriateness of the chosen medication, dosing, potential side effects, and overall therapeutic efficacy based on the patient's specific symptoms and comorbidities. By identifying medication-related problems such as under-treatment, over-treatment, or interactions with other prescribed or over-the-counter medications, pharmacists can

enhance the therapeutic outcomes for patients suffering from depression [20].

2. **Patient Education and Counseling:** One of the pharmacist's critical roles involves educating patients about their medications, including the expected benefits, potential side effects, and the importance of adherence to prescribed regimens. Anecdotal evidence suggests that patients who receive thorough medication counseling are better equipped to manage their conditions, experience fewer side effects, and demonstrate improved adherence. Pharmacists can facilitate discussions that empower patients to voice their concerns, clarify misconceptions, and promote a collaborative approach to therapy [21].
3. **Monitoring and Adjusting Therapy:** Depression is often characterized by fluctuations in symptom severity; therefore, continuous monitoring is essential. Pharmacists can assist in tracking the efficacy of treatment and monitoring for adverse effects or interactions through regular follow-ups. They can recommend dosage adjustments, transitions to alternative medications, or adjunctive therapies based on findings from ongoing evaluations. In practice, this might involve collaborating with prescribers to tailor treatment plans that align with patients' evolving needs [21].
4. **Addressing Comorbid Conditions:** Patients with depression often present with comorbid conditions such as anxiety, chronic pain, and cardiovascular diseases that can complicate treatment. Pharmacists can play a crucial role in recognizing these comorbidities and ensuring that medication regimens are optimized to address all aspects of a patient's health. They can conduct risk assessments for polypharmacy, initiate appropriate referrals, and assist in managing overlapping treatments to minimize adverse effects [21].
5. **Implementing Evidence-Based Practices:** With the rapid advancement of

research into depression and its management, staying abreast of the latest clinical evidence is essential. Pharmacists are crucial in applying evidence-based practices in their recommendations, utilizing clinical guidelines, and participating in continuing education to improve patient care. Their involvement ensures that patients benefit from the most effective and up-to-date therapeutic approaches [21].

Improving Medication Management with Pharmacist Supervision

To optimize the impact of pharmacist-led medication management for depression, several strategies can be employed:

- **Integration into Healthcare Teams:** Embedding pharmacists within interdisciplinary healthcare teams, particularly in mental health clinics or primary care settings, ensures collaborative medication management. Regular communication between pharmacists, primary care physicians, psychologists, and other health professionals can lead to comprehensive patient assessments and coordinated care [22].
- **Utilization of Technology:** Electronic health records (EHRs) and clinical decision support systems enhance the ability of pharmacists to monitor patients effectively. These tools enable pharmacists to assess medication regimens, flag potential problems, and provide actionable insights to prescribers and patients alike. Additionally, telepharmacy services offer accessible support for patients with limited access to healthcare resources [22].
- **Patient-Centered Approaches:** Tailoring interventions to individual needs can significantly enhance patient engagement and satisfaction. Understanding each patient's unique circumstances, preferences, and goals can lead to more effective medication management strategies. Pharmacists can encourage patient participation in shared decision-making, helping them feel more invested in their treatment plans.

- **Focus on Mental Health Education:** Community outreach and health promotion initiatives led by pharmacists can increase mental health awareness and reduce the stigma surrounding depression. Educational programs focusing on the importance of medication adherence, early intervention, and available resources can empower individuals to seek help and engage in their treatment actively [22].

Patient Education and Counseling Strategies in Depression Care:

Depression, a prevalent mental health disorder affecting millions worldwide, presents considerable challenges not only to those experiencing it but also to healthcare providers involved in its management. With over 264 million people globally impacted by depression, effective patient education and counseling strategies have emerged as essential components of comprehensive care [23].

Depression is characterized by persistent feelings of sadness, hopelessness, and a lack of interest or pleasure in activities once enjoyed. Symptoms may vary in severity and can include fatigue, changes in appetite, difficulty concentrating, and thoughts of death or suicide. The World Health Organization acknowledges depression as a leading cause of disability, highlighting its significant impact on individuals' quality of life, interpersonal relationships, and productivity. Given the multifaceted nature of depression, which can involve biological, psychological, and social factors, a holistic approach to treatment encompassing medication, psychotherapy, lifestyle interventions, and supportive counseling is critical [23].

Patient education encompasses the provision of information to individuals about their health, treatment options, and the management of their condition. In the context of depression, education plays a vital role in demystifying the disorder, promoting understanding of its causes, and normalizing the experience of mental illness. When patients are equipped with knowledge regarding their condition, they tend to feel more empowered and engaged in their treatment process. Education can help patients recognize the signs and symptoms of depression, understand the benefits and side effects of medications, and appreciate the

importance of therapy and lifestyle modifications in their care plan [24].

Incorporating education into clinical practice enhances patient involvement. A meta-analysis published in the journal *Patient Education and Counseling* found that educational interventions improved treatment adherence and satisfaction with care. Furthermore, educated patients often have better outcomes, as they are more likely to engage in self-care practices, adhere to prescribed medications, and communicate openly with their healthcare providers about their needs and progress [24].

Counseling Strategies in Depression Care

Effective counseling strategies are integral to patient education in the context of depression management. Several evidence-based approaches have been developed to enhance the therapeutic relationship between patients and practitioners, facilitate communication, and improve treatment adherence [25].

1. **Motivational Interviewing (MI):** MI is a client-centered counseling approach that seeks to enhance intrinsic motivation to change by exploring and resolving ambivalence. In the context of depression care, MI can be particularly effective in encouraging patients to adhere to treatment recommendations, engage in behavioral activation, and make positive lifestyle changes. By employing open-ended questions, reflective listening, and affirmations, practitioners can help patients articulate their feelings and motivations, fostering a collaborative therapeutic alliance [25].
2. **Cognitive Behavioral Therapy (CBT):** CBT is a structured, goal-oriented psychotherapy that addresses negative thought patterns and behaviors associated with depression. Educating patients about the cognitive model of depression can empower them to recognize and challenge distorted thoughts that contribute to their condition. Through CBT, patients learn practical skills to manage their symptoms, ultimately enhancing their sense of agency and self-efficacy [26].

3. **Psychoeducation:** This strategy focuses on providing patients with information about depression and its treatment effectively. Psychoeducation may include discussions about the nature of the illness, the biological basis of depression, treatment options, and strategies to cope with stress and symptoms. By enhancing their understanding, patients can become more active participants in their care, promoting adherence to treatment and reducing feelings of isolation and stigma [26].
4. **Mindfulness and Stress Management Techniques:** Incorporating mindfulness practices and stress management techniques into counseling can offer patients tools to manage symptoms of depression effectively. Educating patients about mindfulness-based interventions encourages them to develop a present-focused awareness that can alleviate feelings of anxiety and depression. Techniques may include deep breathing exercises, body scans, and guided imagery, which can enhance coping and resilience [27].
5. **Collaborative Care Models:** Collaborative care approaches involve coordinated efforts among healthcare providers to manage patients with depression effectively. Effective communication between primary care providers, mental health professionals, and patients fosters a supportive environment conducive to education and management. Regular follow-ups and assessments are essential components of collaborative care, allowing for continuous patient education, evaluation of treatment efficacy, and necessary adjustments to the care plan [27].

Barriers to Effective Patient Education and Counseling

While patient education and counseling strategies are integral to depression care, several barriers can impede their effectiveness. Stigma surrounding mental health issues often prevents individuals from seeking help or fully engaging in treatment. Additionally, variability in health literacy levels can affect a patient's ability to comprehend educational

materials, necessitating tailored approaches to address diverse needs. Time constraints in clinical settings can also limit the depth of education and counseling that providers are able to deliver, often reducing patient interactions to only medication management or brief check-ins [28].

Moreover, cultural differences may influence attitudes toward mental health and treatment preferences. It is crucial for healthcare providers to be aware of and sensitive to these factors, as culturally competent care can enhance the effectiveness of education and counseling initiatives [29].

Collaboration Between Pharmacists and Healthcare Providers:

The prevalence of depression has risen significantly over the past few decades, emerging as one of the leading causes of disability worldwide. It is a complex mental health disorder characterized by persistent sadness and a lack of interest or pleasure in previously enjoyable activities. This condition can severely impair an individual's quality of life, necessitating a multifaceted approach to treatment. In this context, the collaboration between pharmacists and health care providers, particularly in the management of depression medications, has become increasingly essential [30].

Pharmacists have long been recognized for their expertise in medications, playing a pivotal role in the overall health care system. Their training equips them with deep knowledge of drug interactions, side effects, and pharmacokinetics, which are critical when managing complex medication regimens for patients with depression. In recent years, pharmacists have taken on a more active role in patient care, transitioning from a traditional focus on dispensing medications to becoming integral members of the health care team [30].

Health care providers, including psychiatrists, psychologists, primary care physicians, and social workers, are responsible for diagnosing depression and establishing treatment plans that might include cognitive-behavioral therapy, psychotherapy, and pharmacotherapy. In many cases, the choice of antidepressant medication, the monitoring of treatment effectiveness, and the management of any adverse effects are critical components of care that require a comprehensive understanding of individual patient needs and conditions [31]

Both pharmacists and health care providers possess unique skills that, when combined, can enhance treatment outcomes. While health care providers identify the need for medications, pharmacists can optimize their utilization, ensuring effective and safe treatment. This collaborative approach can lead to improved medication adherence, reduced side effects, and, ultimately, better overall patient outcomes [32].

Effective collaboration between pharmacists and health care providers can significantly benefit patients suffering from depression. One of the most immediate advantages is the enhancement of medication management. Pharmacists can work alongside health care providers to monitor patient responses to medications, assess compliance, and perform medication reviews. This ongoing evaluation helps in adjusting therapy to maximize efficacy while minimizing adverse effects [33].

In addition, pharmacists can educate patients regarding their medications, including potential side effects and the importance of adherence, as well as the role of lifestyle modifications in managing depression. This patient-centered approach not only empowers individuals to take charge of their treatment but also fosters a therapeutic alliance that can improve overall satisfaction with care [34].

Collaborative practices have also been shown to reduce the incidence of medication-related issues, such as adverse drug reactions and drug interactions. By providing medication therapy management, pharmacists can alert health care providers to potential conflicts and suggest alternative therapies when necessary. This vigilance is particularly important in polypharmacy cases, where patients may be taking multiple medications that could interact negatively with antidepressants [35].

Moreover, collaboration can reduce the stigma associated with mental health treatment. When pharmacists engage with patients openly about the importance of mental health and actively participate in their care, they can help normalize seeking help for depression. This can encourage patients to pursue treatment earlier and adhere more closely to their prescribed regimens.

Despite the potential benefits of pharmacist-health care provider collaboration, several challenges can hinder effective partnerships. One of the main obstacles is the traditional siloed approach to health

care delivery. Many health care systems are not structured to promote interprofessional communication, leading to fragmented care. As a result, essential information regarding medication management may not be shared promptly between providers [36].

Another significant challenge is the varying levels of education and training in pharmacotherapy among different health care providers. While pharmacists are well-versed in medication management, some providers may lack the depth of knowledge regarding the latest treatments and best practices for managing depression pharmacotherapy. This gap can lead to miscommunication and suboptimal patient care [37].

Additionally, reimbursement structures often do not incentivize collaboration. Many health insurance plans may not cover or reimburse for the services provided by pharmacists, despite their critical role in managing medication therapies. This limitation can dissuade health care providers and pharmacists from seeking collaborative efforts, as financial viability remains a pressing concern [38].

To enhance collaboration in the management of depression medications, several strategies can be employed. First and foremost, education and training for both pharmacists and health care providers should be emphasized. Interprofessional training programs can help bridge the knowledge gap and foster mutual understanding of each profession's role in patient care.

The establishment of collaborative practice agreements (CPAs) can also facilitate effective teamwork. These formal agreements outline the responsibilities of each professional, ensuring that care delivery is structured and coherent. CPAs provide clarity regarding how pharmacists can initiate, adjust, or discontinue medications as part of a collaborative team, thereby expanding their role in depression management [39].

Utilization of health information technologies, such as electronic health records (EHRs), can streamline communication and foster a collaborative environment. EHRs allow for real-time sharing of patient information, ensuring that all team members are updated on the patient's treatment plan and progress. This technology has the potential to

significantly minimize errors and enhance decision-making [40].

Additionally, integrated care models that bring together primary care and mental health services can create a more cohesive approach to managing depression. Co-located services allow patients to receive comprehensive care in one setting, thereby improving access and reducing fragmentation [40].

Monitoring Outcomes: Assessing the Impact of Interventions:

Depression, a prevalent mental health disorder, affects millions of individuals globally, profoundly impacting their emotional, cognitive, and physical well-being. The advent of pharmacological interventions has provided a means to alleviate the debilitating symptoms associated with this condition. However, the effectiveness of depression medication interventions can vary widely among individuals. Monitoring results and evaluating the impact of these interventions are crucial to ensuring optimal patient outcomes and improving therapeutic strategies [41].

Depression is characterized by persistent feelings of sadness, hopelessness, and a lack of interest or pleasure in once-enjoyed activities. It can manifest in various forms, including major depressive disorder, persistent depressive disorder, and seasonal affective disorder, among others. The complexity of depression arises from its multifaceted nature, influenced by genetic, biochemical, environmental, and psychosocial factors [42].

Pharmacotherapy for depression primarily involves antidepressants, which are classified into several categories, including selective serotonin reuptake inhibitors (SSRIs), serotonin-norepinephrine reuptake inhibitors (SNRIs), tricyclic antidepressants (TCAs), and monoamine oxidase inhibitors (MAOIs). Each class of medication operates through different mechanisms to correct the chemical imbalances in the brain attributed to depression, notably neurotransmitters like serotonin and norepinephrine [43].

While medications can significantly reduce depressive symptoms, their effectiveness often hinges on precise diagnosis, personalized treatment plans, and ongoing evaluation of patient responses.

This highlights the importance of systematic monitoring of treatment outcomes.

Monitoring results in the context of depression medication interventions serves multiple purposes. First and foremost, it allows healthcare providers to assess the therapeutic efficacy of prescribed medications. Regular monitoring of patients helps determine whether the treatment is alleviating depressive symptoms or whether adjustments are necessary [44].

Furthermore, monitoring can provide invaluable insights into side effects and adverse reactions associated with antidepressant therapy. While many patients benefit from these medications, adverse effects can range from mild to severe and may discourage adherence to the treatment plan. By closely monitoring patients, healthcare providers can make timely interventions, such as dosage adjustments or switching medications, to mitigate these effects [45].

Another significant reason for monitoring results is to enhance personalized medicine in depression treatment. Given that individuals may respond differently to the same medication, continuous assessment allows for a tailored approach. Patient feedback regarding their experiences can guide clinicians in selecting the most effective treatment strategies, thereby optimizing outcomes.

Finally, monitoring the impact of antidepressant interventions is essential for the broader field of mental health research. Gathering data on medication efficacy across diverse populations contributes to the development of more effective treatment protocols and supports the refinement of clinical guidelines [46].

Evaluating the impact of depression medication interventions involves a variety of methodologies, ranging from clinical assessment tools to patient-reported outcomes. One widely used approach includes standardized rating scales, such as the Hamilton Depression Rating Scale (HAM-D), the Beck Depression Inventory (BDI), and the Patient Health Questionnaire-9 (PHQ-9). These scales provide a quantitative measure of depressive symptoms and facilitate comparisons over time.

In addition to standardized scales, qualitative assessments through patient interviews can yield valuable insights into an individual's experience

with medication. Discussions about mood changes, lifestyle adjustments, and coping mechanisms can help clinicians understand the patient's perspective and refine treatment strategies accordingly [47].

Another critical component of evaluating impact is the concept of adherence to medication regimens. Non-adherence remains a significant barrier to effective depression treatment. Researchers may use electronic monitoring devices, self-reporting methods, and pharmacy refill data to assess medication adherence. Understanding patterns of adherence is essential for tailoring support mechanisms and interventions to ensure that patients receive their medications consistently.

Moreover, long-term studies and randomized controlled trials (RCTs) play a crucial role in evaluating the impact of depression medications over time. Through RCTs, researchers assess the effectiveness of various antidepressant therapies in diverse populations, establishing evidence-based guidelines for treatment.

Despite the significance of monitoring results and evaluating the impact of depression interventions, several challenges persist. One notable challenge is the variability in individual responses to medication. Factors such as genetics, co-occurring mental health conditions, and socioeconomic status can significantly affect outcomes and complicate the assessment process. Additionally, the stigma associated with mental health disorders may deter patients from providing honest feedback regarding their experiences, thus skewing evaluation results [48].

Another hurdle is the underutilization of monitoring tools in clinical practice. Despite their proven effectiveness in evaluating treatment outcomes, standardized assessments are often not consistently employed. Many healthcare providers may lack training or resources to implement these measures effectively.

Furthermore, the dynamic nature of depression diagnosis requires ongoing assessment. As patient symptoms fluctuate, the initial treatment plan may become outdated. Clinicians must remain vigilant and adaptable, regularly re-evaluating effectiveness to align with the patient's current condition [48].

Barriers to Implementation of Pharmacist-Led Interventions:

The role of pharmacists has evolved significantly over recent years, expanding from traditional dispensing responsibilities to more active participation in patient care, particularly in managing chronic conditions such as depression. Pharmacists are ideally positioned to implement interventions for patients on antidepressant medications due to their expertise in pharmacotherapy, accessibility, and the ability to provide patient education. However, the realization of pharmacist-led interventions for depression medications is often hindered by several barriers [49].

One of the primary systemic barriers to implementing pharmacist-led interventions is the fragmented healthcare system. In many healthcare settings, there is a lack of communication and coordination between different healthcare providers. Mental health care often operates in silos, with little collaboration among pharmacists, physicians, and mental health specialists. This disjunction can lead to gaps in patient care and limit the pharmacological knowledge that pharmacists can contribute. When healthcare teams do not communicate effectively, it exacerbates issues around medication management for patients with depression, such as incomplete medication histories and inconsistent follow-ups [49].

Additionally, the reimbursement landscape presents a significant challenge. Although pharmacists are proficient in medication management, many third-party payers do not recognize pharmacist-led services, resulting in limited financial incentives for pharmacists to offer these interventions. Without appropriate reimbursement models that value the clinical services provided by pharmacists, there is little motivation for their involvement beyond traditional roles. This financial disincentive creates a barrier to the expansion of pharmacist-led interventions, stymieing potential improvements in patient outcomes associated with collaborative care [49].

Another systemic factor is the differing state regulations governing pharmacy practice. In some jurisdictions, laws may restrict pharmacists' authority in prescribing or modifying medication regimens for mental health conditions. These

restrictions limit pharmacists' ability to implement interventions that could enhance patient outcomes in depression management. Moreover, variations in the extent of pharmacists' roles across states create inconsistencies in practice standards that can confuse both patients and healthcare providers regarding pharmacists' capabilities [50].

Professional challenges also pose significant obstacles to pharmacist-led interventions for depression. Many pharmacists lack specific training in mental health care, leading to a confidence gap in addressing psychiatric conditions. Traditional pharmacy curricula often do not emphasize mental health management, which is necessary for pharmacists to engage effectively with patients dealing with depression. Although continuing education programs are available, participation is not always mandated, resulting in gaps in knowledge and skills to support effective interventions [51].

Moreover, there is often a lack of awareness among healthcare providers about the role pharmacists can play in managing depression. Many physicians may not recognize pharmacists as valuable members of the healthcare team, which can lead to missed opportunities for collaborative care. This lack of integration can further reinforce the traditional role of pharmacists solely as dispensers of medications rather than active partners in clinical decision-making processes [51].

Pharmacists also face time constraints in their practice. Although they are often a patient's first point of contact within the healthcare system, the high volume of prescriptions and limited appointment slots may prevent pharmacists from dedicating sufficient time to mental health consultations. This inability to engage deeply with patients can limit the effectiveness of any intervention related to depression medications [52].

Patient-related factors also present significant challenges to the implementation of pharmacist-led interventions for depression. Stigma associated with mental health conditions often discourages patients from seeking help or discussing their concerns openly with healthcare professionals, including pharmacists. Patients may be reluctant to share information regarding their mental state or adherence to medication regimens, which are essential elements for effective intervention [53].

Moreover, the demographic factors such as age, socioeconomic status, and education level can influence patients' perceptions of pharmacists' roles in managing their mental health. If patients are not fully aware of the services provided by pharmacists, they may be less likely to engage with them about their depression medications. Language barriers and health literacy issues may further complicate these interactions, creating barriers to optimal communication and understanding between pharmacists and patients [53].

Another significant challenge is adherence to prescribed depression medications, which is compounded by patients' beliefs about their treatment and medication. Factors like side effects, complexity of medication regimens, and lack of perceived efficacy can lead to nonadherence. Pharmacists can play a pivotal role in addressing these issues through patient education and counseling; however, the effectiveness of these interventions can be stunted if patients do not perceive value in these services or are unaware of their availability [54].

Future Directions and Recommendations for Practice:

Pharmacists continue to play an essential role in the healthcare system, particularly in the management of chronic conditions such as depression. As depression rates have escalated globally, the need for effective management strategies has become increasingly pressing. With the advent of new medications, the emergence of integrated care models, and a growing emphasis on patient-centered care, pharmacists are uniquely positioned to enhance the management of depression medications [55].

Depression is a multifaceted mental health disorder influenced by biological, psychological, and social factors. The World Health Organization (WHO) estimates that more than 264 million people globally suffer from depression, underscoring its prevalence and burden on healthcare systems. The effective management of depression often involves pharmacotherapy, psychotherapy, and lifestyle modifications. Pharmacists, as medication experts, play a pivotal role in this trio, enhancing medication adherence, optimizing pharmacotherapy, and supporting patients through complex treatment regimens [55].

However, the landscape of depression management is continually evolving, characterized by advancements in medication options, increased understanding of pharmacogenomics, and heightened awareness of the role of mental health in chronic disease management. To align with these advancements, several future directions and recommendations for pharmacist practice are warranted [55].

Expanding Role in Integrated Care Models

One significant trend that has emerged in mental health care is the movement toward integrated care models. These models promote collaboration among healthcare providers, allowing pharmacists to work alongside physicians, psychologists, and other mental health professionals. Future pharmacist practice should emphasize active participation in interdisciplinary teams to facilitate holistic care for patients with depression [55].

1. **Enhancing Team Collaboration:** Future recommendations include encouraging pharmacists to attend regular team meetings, participate in care planning, and contribute their expertise on depression medications. Pharmacists can assist in identifying treatment-resistant cases and optimizing pharmacotherapy by integrating their knowledge of drug interactions, efficacy, and safety.
2. **Utilizing Technology:** The adoption of telehealth and digital health platforms can enhance collaborative practice. Pharmacists can utilize these technologies to monitor patient progress, provide medication counseling, and ensure continuity of care, particularly for patients unable to access traditional healthcare settings [55].

Emphasizing Patient-Centered Care and Counseling

The future of pharmacist practice in managing depression medications must prioritize patient-centered care. This approach recognizes the unique needs, preferences, and circumstances of patients, fostering a more engaging and supportive environment [56].

1. **Comprehensive Medication Reviews:** Pharmacists should routinely conduct

comprehensive medication reviews that consider both pharmacotherapy and the psychosocial context of the patient. This process enables pharmacists to identify potential barriers to medication adherence and develop tailored interventions to overcome those challenges.

2. **Counseling Skills Development:** Continuous education in motivational interviewing and counseling techniques will be beneficial for pharmacists. Enhancing these skills will facilitate more effective communication with patients, allowing pharmacists to build rapport and empower patients to take an active role in their treatment journey [56].

Advancing Knowledge of Pharmacogenomics

Pharmacogenomics is revolutionizing the way medications are prescribed by providing insights into how individuals metabolize drugs based on their genetic makeup. As pharmacogenomic testing becomes more accessible, pharmacists need to be equipped with the knowledge and tools necessary to interpret these results [57].

1. **Integrating Pharmacogenomics into Practice:** Pharmacists should receive training on pharmacogenomic testing and its implications for depression medications. Understanding gene-drug interactions will enable pharmacists to make informed recommendations regarding medication selection and dosing, thus enhancing therapeutic outcomes.
2. **Educating Patients and Providers:** Pharmacists must also serve as educators for both patients and other healthcare providers regarding the benefits and limitations of pharmacogenomic testing. This will foster a collaborative environment where treatment decisions are made based on the most accurate and individualized data available [57].

Promoting Mental Health Awareness and Education

As frontline healthcare providers, pharmacists have a unique opportunity to promote mental health awareness and education within their communities [58].

1. **Community Outreach Programs:** Future pharmacist practice should include the development of community outreach initiatives aimed at educating the public about depression, the importance of medication adherence, and the role of pharmacists in mental health management [58].
2. **Utilizing Social Media and Digital Platforms:** Leveraging social media and digital platforms can also amplify pharmacists' reach. Creating informative content that addresses common misconceptions about depression and depression medications can raise awareness and encourage individuals to seek help when needed [59].

Conclusion:

The implementation of pharmacist-led interventions in the management of depression represents a significant advancement in comprehensive mental health care. By leveraging their expertise in pharmacotherapy and patient education, pharmacists can effectively contribute to treatment optimization, enhance medication adherence, and address barriers that patients face in managing their mental health. This collaborative approach not only facilitates better clinical outcomes but also fosters a supportive healthcare environment where patients feel empowered to engage in their treatment journey.

Furthermore, as mental health continues to gain recognition as a critical component of overall health, integrating pharmacists into the multidisciplinary care team will be essential in addressing the rising prevalence of depression. Future research will be invaluable in continuing to refine these interventions, identify best practices, and assess their long-term impact on patient outcomes. Ultimately, pharmacist-led initiatives can play a crucial role in reducing the stigma associated with mental health issues, promoting early intervention, and improving the quality of life for individuals living with depression.

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