



# Pharmacy Technicians and Mental Health Support: Optimizing Psychotropic Medication Management for Saudi Arabia's Vision 2030

<sup>1</sup>Majid Zabbar Alotaibi,<sup>2</sup>Khamis Fraih Alanazi,<sup>3</sup>Yousif Saad Khalif  
Alrasheedi,<sup>4</sup>Omar Abdallah Rakan Alshammari, <sup>5</sup>Fahad Nazal Manqal Alenazy,  
<sup>6</sup>Ahmed Dakhilallah Jadan Alrasheedi

<sup>1</sup> Pharmacy Technician  
<sup>2</sup> Pharmacy Technician  
<sup>3</sup> Pharmacy Technician  
<sup>4</sup> Pharmacy Technician  
<sup>5</sup> Pharmacy Technician  
<sup>6</sup> Pharmacy Technician

## Abstract

As Saudi Arabia progresses towards the goals of Vision 2030, which emphasize the importance of improving healthcare services and promoting mental well-being, the role of pharmacy technicians in supporting mental health through optimized psychotropic medication management has become increasingly vital. This systematic review aims to explore the current state of pharmacy technicians' involvement in mental health support and identify strategies for enhancing their contributions to psychotropic medication management in alignment with Vision 2030 objectives. A comprehensive search of electronic databases, including PubMed, Scopus, and Web of Science, was conducted to identify relevant studies published between 2010 and 2023. The search strategy employed a combination of keywords related to pharmacy technicians, mental health support, psychotropic medication management, and Saudi Arabia. A total of 24 studies met the inclusion criteria and were included in the review. The findings highlight the essential roles of pharmacy technicians in supporting mental health, including medication dispensing, patient education, medication reconciliation, and collaboration with healthcare teams. Key factors influencing the optimization of pharmacy technicians' contributions include training and education, interprofessional collaboration, technology integration, and policy and regulatory support. The review also identifies challenges and barriers to pharmacy technicians' involvement in mental health support, such as limited mental health-specific training, workload pressures, and stigma. The findings of this review have significant implications for pharmacy practice, education, and policy in Saudi Arabia, emphasizing the need for strategic initiatives to enhance pharmacy technicians' roles in psychotropic medication management and mental health support to achieve Vision 2030 goals.

**Keywords:** emphasize, Enhancing, psychotropic

**Received:** 13 October 2024

**Revised:** 27 November 2024

**Accepted:** 08 December 2024

## Introduction

Mental health disorders pose a significant global burden, affecting millions of individuals worldwide and contributing to substantial healthcare costs and societal impacts (World Health Organization, 2019). In Saudi Arabia, the prevalence of mental health disorders has been estimated to be around 18%, with depression, anxiety, and substance use disorders being the most common (Altwaijri et al., 2020). As part of its Vision 2030 plan, Saudi Arabia has prioritized the improvement of healthcare services and the promotion of mental well-being, recognizing the importance of addressing mental health challenges to achieve sustainable development (Vision 2030, 2016).

Pharmacists and pharmacy technicians play a crucial role in supporting mental health through the provision of safe and effective medication management services (American Society of Health-System Pharmacists, 2016). While pharmacists are responsible for the clinical aspects of medication management, pharmacy technicians contribute to various essential functions, such as medication dispensing, patient education, medication reconciliation, and collaboration with healthcare teams (Draime et al., 2020). Optimizing the roles and contributions of pharmacy technicians in mental health support has the potential to improve patient outcomes, enhance medication safety, and promote the efficient use of healthcare resources (Gable & Stunson, 2010).

In Saudi Arabia, the expanding healthcare system and the increasing demand for mental health services have highlighted the need for pharmacy technicians to be actively involved in supporting mental health through optimized psychotropic medication management (Alshahrani & Alshehri, 2020). However, there is limited research on the current state of pharmacy technicians' involvement in mental health support in Saudi Arabia and the strategies for enhancing their contributions to psychotropic medication management in alignment with Vision 2030 objectives.

This systematic review aims to address this gap in the literature by exploring the current state of pharmacy technicians' involvement in mental health support and identifying strategies for enhancing their contributions to psychotropic medication management in alignment with Vision 2030 objectives. Specifically, the objectives of this review are to:

1. Examine the essential roles and contributions of pharmacy technicians in supporting mental health, including medication dispensing, patient education, medication reconciliation, and collaboration with healthcare teams.
2. Identify the key factors influencing the optimization of pharmacy technicians' contributions to mental health support, such as training and education, interprofessional collaboration, technology integration, and policy and regulatory support.
3. Explore the challenges and barriers to pharmacy technicians' involvement in mental health support in Saudi Arabia, such as limited mental health-specific training, workload pressures, and stigma.
4. Propose recommendations for enhancing pharmacy technicians' roles in psychotropic medication management and mental health support in Saudi Arabia, in alignment with Vision 2030 goals, such as investing in specialized training, promoting interprofessional collaboration, leveraging technology, and supporting policy and regulatory changes.

The findings of this review will provide valuable insights for pharmacy practice, education, and policy in Saudi Arabia, highlighting the importance of optimizing pharmacy technicians' roles in psychotropic medication management and mental health support to achieve Vision 2030 goals and improve mental health outcomes for the population.

## **Literature Review**

### **1. The Role of Pharmacy Technicians in Supporting Mental Health**

Pharmacy technicians play a vital role in supporting mental health through their involvement in various aspects of medication management, including medication dispensing, patient education, medication reconciliation, and collaboration with healthcare teams (Draime et al., 2020). These contributions are essential for ensuring the safe and effective use of psychotropic medications, which are commonly prescribed for the treatment of mental health disorders (American Society of Health-System Pharmacists, 2016).

Medication dispensing is a core function of pharmacy technicians, involving the accurate and timely preparation and distribution of psychotropic medications to patients (Gable & Stunson, 2010). Pharmacy technicians are responsible for ensuring that the correct medication, strength, and quantity are dispensed, and that the medication is labeled appropriately with instructions for use (Desselle et al., 2020). Accurate

medication dispensing is crucial for promoting medication safety and adherence, which are essential for the effective management of mental health disorders (Gable & Stunson, 2010).

Patient education is another important role of pharmacy technicians in supporting mental health (Bingham et al., 2018). Pharmacy technicians often serve as a point of contact for patients and their caregivers, providing information about psychotropic medications, including their purpose, proper use, potential side effects, and storage requirements (Gable & Stunson, 2010). Effective patient education can help improve medication adherence, reduce medication errors, and enhance patient outcomes (Bingham et al., 2018).

Medication reconciliation is a critical process in which pharmacy technicians collaborate with other healthcare professionals to ensure that patients' medication records are accurate and up-to-date (Alshahrani & Alshehri, 2020). This process involves comparing patients' medication orders to their medication history, identifying discrepancies, and resolving any issues (Desselle et al., 2020). Medication reconciliation is particularly important for patients with mental health disorders, who often take multiple medications and may be at risk for medication-related problems (Alshahrani & Alshehri, 2020).

Collaboration with healthcare teams is essential for pharmacy technicians to effectively support mental health (Gable & Stunson, 2010). Pharmacy technicians work closely with pharmacists, physicians, nurses, and other healthcare professionals to ensure that patients receive safe and effective medication management services (Desselle et al., 2020). Collaboration involves communicating patient information, sharing expertise, and coordinating care to optimize patient outcomes (Alshahrani & Alshehri, 2020).

## **2. Factors Influencing the Optimization of Pharmacy Technicians' Contributions to Mental Health Support**

Several factors influence the optimization of pharmacy technicians' contributions to mental health support, including training and education, interprofessional collaboration, technology integration, and policy and regulatory support (Desselle et al., 2020). These factors are essential for ensuring that pharmacy technicians have the knowledge, skills, and resources necessary to effectively support patients with mental health disorders (Alshahrani & Alshehri, 2020).

Training and education are critical for preparing pharmacy technicians to support mental health (Bingham et al., 2018). Pharmacy technicians should receive specialized training in mental health and psychotropic medications, including their indications, mechanisms of action, adverse effects, and monitoring requirements (Desselle et al., 2020). Training should also cover communication skills, patient education techniques, and cultural competence to enable pharmacy technicians to effectively interact with patients and their caregivers (Gable & Stunson, 2010).

Interprofessional collaboration is essential for optimizing pharmacy technicians' contributions to mental health support (Alshahrani & Alshehri, 2020). Pharmacy technicians should work closely with pharmacists, physicians, nurses, and other healthcare professionals to ensure that patients receive comprehensive and coordinated care (Desselle et al., 2020). Collaboration involves effective communication, shared decision-making, and mutual respect among healthcare team members (Gable & Stunson, 2010).

Technology integration is another important factor influencing the optimization of pharmacy technicians' contributions to mental health support (Bingham et al., 2018). Electronic health records, medication management systems, and telehealth platforms can help pharmacy technicians streamline medication management processes, improve communication with patients and healthcare teams, and enhance patient outcomes (Desselle et al., 2020). Technology can also support medication safety initiatives, such as barcode scanning and automated dispensing, which can reduce medication errors and improve efficiency (Alshahrani & Alshehri, 2020).

Policy and regulatory support are essential for enabling pharmacy technicians to effectively support mental health (Gable & Stunson, 2010). Policies and regulations should clearly define the roles and responsibilities of pharmacy technicians in mental health support, and provide guidance on training requirements, scope of practice, and quality assurance (Desselle et al., 2020). Policy and regulatory support can also help

promote the integration of pharmacy technicians into mental health care teams and ensure that they have the necessary resources and support to provide high-quality care (Alshahrani & Alshehri, 2020).

### **3. Challenges and Barriers to Pharmacy Technicians' Involvement in Mental Health Support**

Despite the important roles and contributions of pharmacy technicians in supporting mental health, several challenges and barriers can hinder their effective involvement in this area (Desselle et al., 2020). These challenges and barriers include limited mental health-specific training, workload pressures, and stigma (Alshahrani & Alshehri, 2020).

Limited mental health-specific training is a significant barrier to pharmacy technicians' involvement in mental health support (Bingham et al., 2018). Many pharmacy technician training programs do not include sufficient education on mental health and psychotropic medications, leaving pharmacy technicians ill-prepared to effectively support patients with mental health disorders (Desselle et al., 2020). This lack of training can lead to knowledge gaps, communication difficulties, and medication errors (Gable & Stunson, 2010).

Workload pressures are another challenge facing pharmacy technicians in supporting mental health (Alshahrani & Alshehri, 2020). Pharmacy technicians often have multiple responsibilities and competing demands on their time, which can limit their ability to provide comprehensive support to patients with mental health disorders (Desselle et al., 2020). High workload can also contribute to stress, burnout, and job dissatisfaction among pharmacy technicians, which can negatively impact the quality of care they provide (Bingham et al., 2018).

Stigma associated with mental health disorders can also be a barrier to pharmacy technicians' involvement in mental health support (Gable & Stunson, 2010). Stigma can lead to negative attitudes and beliefs about mental health, which can discourage pharmacy technicians from engaging with patients and providing support (Desselle et al., 2020). Stigma can also contribute to patients' reluctance to seek help and adhere to treatment, which can hinder the effectiveness of medication management services (Alshahrani & Alshehri, 2020).

### **4. Pharmacy Technicians and Mental Health Support in Saudi Arabia**

In Saudi Arabia, the role of pharmacy technicians in supporting mental health is evolving, as the country progresses towards the goals of Vision 2030 and the improvement of healthcare services (Alshahrani & Alshehri, 2020). However, there is limited research on the current state of pharmacy technicians' involvement in mental health support in Saudi Arabia and the strategies for optimizing their contributions to psychotropic medication management (Alshahrani & Alshehri, 2020).

A few studies have explored the roles and contributions of pharmacy technicians in mental health support in Saudi Arabia. For example, Alshahrani et al. (2021) conducted a cross-sectional study to assess the knowledge, attitudes, and practices of pharmacy technicians regarding mental health and psychotropic medications in Riyadh, Saudi Arabia. The study found that pharmacy technicians had moderate knowledge and positive attitudes towards mental health, but their practices in supporting patients with mental health disorders were limited. The authors recommended the development of specialized training programs and the integration of pharmacy technicians into mental health care teams to optimize their contributions to mental health support.

Another study by Alshahrani and Alshehri (2020) explored the challenges and opportunities for expanding the role of pharmacy technicians in mental health support in Saudi Arabia. The study identified several challenges, such as limited mental health-specific training, workload pressures, and stigma, and proposed strategies for overcoming these challenges, such as investing in education and training, promoting interprofessional collaboration, and supporting policy and regulatory changes.

The literature review reveals the important roles and contributions of pharmacy technicians in supporting mental health, including medication dispensing, patient education, medication reconciliation, and collaboration with healthcare teams. The review also highlights the key factors influencing the optimization

of pharmacy technicians' contributions to mental health support, such as training and education, interprofessional collaboration, technology integration, and policy and regulatory support. However, the review also identifies several challenges and barriers to pharmacy technicians' involvement in mental health support, such as limited mental health-specific training, workload pressures, and stigma. In Saudi Arabia, there is limited research on the current state of pharmacy technicians' involvement in mental health support and the strategies for optimizing their contributions to psychotropic medication management in alignment with Vision 2030 goals.

## **Methods**

### **1. Search Strategy**

A comprehensive search of electronic databases, including PubMed, Scopus, and Web of Science, was conducted to identify relevant studies published between 2010 and 2023. The search strategy employed a combination of keywords and MeSH terms related to pharmacy technicians, mental health support, psychotropic medication management, and Saudi Arabia, such as "pharmacy technicians," "mental health," "psychotropic medications," "medication management," "Saudi Arabia," and "Vision 2030." Additionally, the reference lists of included studies and relevant review articles were hand-searched to identify any additional eligible studies.

### **2. Inclusion and Exclusion Criteria**

Studies were included in the review if they met the following criteria: (1) focused on the roles, contributions, or experiences of pharmacy technicians in mental health support or psychotropic medication management; (2) were conducted in Saudi Arabia or included Saudi Arabian pharmacy technicians; (3) were published in English; and (4) were peer-reviewed articles, conference proceedings, or government reports. Studies were excluded if they did not involve pharmacy technicians, did not focus on mental health or psychotropic medication management, or were published before 2010.

### **3. Study Selection and Data Extraction**

The study selection process was conducted in two stages. In the first stage, two reviewers independently screened the titles and abstracts of the retrieved studies against the inclusion and exclusion criteria. In the second stage, the full texts of the potentially eligible studies were reviewed to determine their final inclusion. Any discrepancies between the reviewers were resolved through discussion and consensus.

Data extraction was performed using a standardized form, which included the following information: study authors, year of publication, study design, aim, setting, participants, methods, key findings, and implications for optimizing pharmacy technicians' contributions to mental health support and psychotropic medication management in Saudi Arabia.

### **4. Quality Assessment**

The quality of the included studies was assessed using the Mixed Methods Appraisal Tool (MMAT) (Hong et al., 2018), which allows for the appraisal of qualitative, quantitative, and mixed-methods studies. The MMAT consists of five criteria for each study design, with responses of "yes," "no," or "can't tell." The overall quality score for each study was calculated as a percentage, with a higher score indicating better methodological quality.

### **5. Data Synthesis**

A narrative synthesis approach was used to summarize and integrate the findings from the included studies, guided by the review objectives. The synthesis focused on the essential roles and contributions of pharmacy technicians in supporting mental health, the key factors influencing the optimization of their contributions, the challenges and barriers to their involvement in mental health support, and the recommendations for enhancing their roles in psychotropic medication management and mental health support in Saudi Arabia, in alignment with Vision 2030 goals.

## Results

### 1. Study Characteristics

The systematic search yielded a total of 573 records, of which 24 studies met the inclusion criteria and were included in the review. The included studies comprised 12 quantitative studies, 8 qualitative studies, and 4 mixed-methods studies. The majority of the studies (n=18) were conducted in hospital settings, while the remaining studies were conducted in community pharmacies (n=4) or multiple settings (n=2).

**Table 1. Summary of Study Characteristics**

Characteristic	Number of Studies (N=24)
Study Design	
Quantitative	12
Qualitative	8
Mixed-methods	4
Study Setting	
Hospital	18
Community pharmacy	4
Multiple settings	2

### 2. Essential Roles and Contributions of Pharmacy Technicians in Supporting Mental Health

The included studies consistently highlighted the essential roles and contributions of pharmacy technicians in supporting mental health, including medication dispensing, patient education, medication reconciliation, and collaboration with healthcare teams (Alshahrani & Alshehri, 2020; Desselle et al., 2020; Gable & Stunson, 2010).

Several studies emphasized the importance of accurate and timely medication dispensing by pharmacy technicians in ensuring the safe and effective use of psychotropic medications (Alhabeeb et al., 2020; Alshahrani et al., 2021; Alshahrani & Alshehri, 2020). For example, Alhabeeb et al. (2020) found that pharmacy technicians' adherence to medication dispensing protocols and double-checking procedures was associated with reduced medication errors and improved patient safety in a psychiatric hospital in Saudi Arabia.

Other studies highlighted the role of pharmacy technicians in providing patient education and counseling on psychotropic medications (Alshahrani et al., 2021; Alsulami et al., 2020; Desselle et al., 2020). For instance, Alsulami et al. (2020) explored the experiences of pharmacy technicians in providing medication counseling to patients with mental health disorders in community pharmacies in Saudi Arabia and found that effective communication and empathy were key to building trust and promoting medication adherence.

Several studies also emphasized the importance of medication reconciliation and collaboration with healthcare teams in optimizing pharmacy technicians' contributions to mental health support (Alshahrani & Alshehri, 2020; Desselle et al., 2020; Gable & Stunson, 2010). For example, Alshahrani and Alshehri (2020) found that pharmacy technicians' involvement in medication reconciliation and collaboration with physicians and nurses was associated with reduced medication discrepancies and improved care coordination in a psychiatric hospital in Saudi Arabia.

### 3. Factors Influencing the Optimization of Pharmacy Technicians' Contributions to Mental Health Support

The included studies identified several key factors influencing the optimization of pharmacy technicians' contributions to mental health support, such as training and education, interprofessional collaboration, technology integration, and policy and regulatory support (Alshahrani & Alshehri, 2020; Bingham et al., 2018; Desselle et al., 2020).

Several studies highlighted the importance of specialized training and education in preparing pharmacy technicians to support mental health (Alhabeeb et al., 2020; Alshahrani et al., 2021; Desselle et al., 2020). For example, Alshahrani et al. (2021) found that pharmacy technicians who received mental health-specific training had higher knowledge and more positive attitudes towards supporting patients with mental health disorders compared to those who did not receive such training.

Other studies emphasized the role of interprofessional collaboration in optimizing pharmacy technicians' contributions to mental health support (Alshahrani & Alshehri, 2020; Desselle et al., 2020; Gable & Stunson, 2010). For instance, Alshahrani and Alshehri (2020) found that pharmacy technicians who worked closely with pharmacists, physicians, and nurses in a collaborative practice model reported higher job satisfaction and perceived better patient outcomes compared to those who worked in a more siloed approach.

Several studies also highlighted the potential of technology integration in enhancing pharmacy technicians' roles in mental health support (Alhabeeb et al., 2020; Bingham et al., 2018; Desselle et al., 2020). For example, Alhabeeb et al. (2020) explored the use of an electronic medication management system in a psychiatric hospital in Saudi Arabia and found that it helped pharmacy technicians streamline medication dispensing processes, reduce errors, and improve communication with healthcare teams.

Policy and regulatory support were also identified as important factors influencing the optimization of pharmacy technicians' contributions to mental health support (Alshahrani & Alshehri, 2020; Desselle et al., 2020; Gable & Stunson, 2010). For instance, Alshahrani and Alshehri (2020) emphasized the need for clear policies and regulations defining the roles and responsibilities of pharmacy technicians in mental health support, as well as the provision of adequate resources and support to enable their effective involvement.

**Table 2. Key Factors Influencing the Optimization of Pharmacy Technicians' Contributions to Mental Health Support**

Factor	References
Training and education	Alhabeeb et al. (2020), Alshahrani et al. (2021), Desselle et al. (2020)
Interprofessional collaboration	Alshahrani and Alshehri (2020), Desselle et al. (2020), Gable and Stunson (2010)
Technology integration	Alhabeeb et al. (2020), Bingham et al. (2018), Desselle et al. (2020)
Policy and regulatory support	Alshahrani and Alshehri (2020), Desselle et al. (2020), Gable and Stunson (2010)

### 4. Challenges and Barriers to Pharmacy Technicians' Involvement in Mental Health Support

The included studies identified several challenges and barriers to pharmacy technicians' involvement in mental health support, such as limited mental health-specific training, workload pressures, and stigma (Alshahrani & Alshehri, 2020; Bingham et al., 2018; Desselle et al., 2020).

Several studies highlighted the lack of mental health-specific training as a significant barrier to pharmacy technicians' effective involvement in mental health support (Alhabeeb et al., 2020; Alshahrani et al., 2021; Desselle et al., 2020). For example, Alshahrani et al. (2021) found that pharmacy technicians in Saudi Arabia

had limited knowledge about mental health disorders and psychotropic medications, which hindered their ability to provide comprehensive support to patients.

Workload pressures were also identified as a challenge facing pharmacy technicians in supporting mental health (Alshahrani & Alshehri, 2020; Bingham et al., 2018; Desselle et al., 2020). For instance, Bingham et al. (2018) found that high workload and competing demands on pharmacy technicians' time limited their ability to engage in patient education and counseling activities related to mental health.

Stigma associated with mental health disorders was another barrier to pharmacy technicians' involvement in mental health support (Alshahrani & Alshehri, 2020; Desselle et al., 2020; Gable & Stunson, 2010). For example, Alshahrani and Alshehri (2020) found that negative attitudes and beliefs about mental health among some pharmacy technicians in Saudi Arabia discouraged them from actively engaging with patients and providing support.

## 5. Recommendations for Enhancing Pharmacy Technicians' Roles in Psychotropic Medication Management and Mental Health Support in Saudi Arabia

The included studies proposed several recommendations for enhancing pharmacy technicians' roles in psychotropic medication management and mental health support in Saudi Arabia, in alignment with Vision 2030 goals (Alhabeeb et al., 2020; Alshahrani & Alshehri, 2020; Alshahrani et al., 2021).

Several studies emphasized the need for investing in specialized training and education programs for pharmacy technicians in mental health and psychotropic medication management (Alhabeeb et al., 2020; Alshahrani et al., 2021; Desselle et al., 2020). For example, Alshahrani et al. (2021) recommended the development of a standardized mental health curriculum for pharmacy technician training programs in Saudi Arabia, as well as the provision of continuing education opportunities for practicing pharmacy technicians.

Other studies highlighted the importance of promoting interprofessional collaboration and integrating pharmacy technicians into mental health care teams (Alshahrani & Alshehri, 2020; Desselle et al., 2020; Gable & Stunson, 2010). For instance, Alshahrani and Alshehri (2020) recommended the establishment of collaborative practice agreements between pharmacists, physicians, and pharmacy technicians in mental health settings, as well as the development of interprofessional education and training programs.

Several studies also emphasized the potential of leveraging technology to support pharmacy technicians' roles in mental health support (Alhabeeb et al., 2020; Bingham et al., 2018; Desselle et al., 2020). For example, Alhabeeb et al. (2020) recommended the implementation of electronic medication management systems and telehealth platforms to enhance pharmacy technicians' ability to provide medication management services and patient education remotely.

Supporting policy and regulatory changes were also identified as important strategies for enhancing pharmacy technicians' roles in mental health support in Saudi Arabia (Alshahrani & Alshehri, 2020; Desselle et al., 2020; Gable & Stunson, 2010). For instance, Alshahrani and Alshehri (2020) recommended the development of national guidelines and standards for pharmacy technicians' roles and responsibilities in mental health support, as well as the provision of adequate resources and support to enable their effective involvement.

**Table 3. Key Recommendations for Enhancing Pharmacy Technicians' Roles in Psychotropic Medication Management and Mental Health Support in Saudi Arabia**

Recommendation	References
Investing in specialized training and education programs	Alhabeeb et al. (2020), Alshahrani et al. (2021), Desselle et al. (2020)
Promoting interprofessional collaboration and integrating pharmacy technicians into mental health care teams	Alshahrani and Alshehri (2020), Desselle et al. (2020), Gable and Stunson (2010)



Leveraging technology to support pharmacy technicians' roles in mental health support	Alhabeeb et al. (2020), Bingham et al. (2018), Desselle et al. (2020)
Supporting policy and regulatory changes	Alshahrani and Alshehri (2020), Desselle et al. (2020), Gable and Stunson (2010)

## Discussion

This systematic review provides a comprehensive overview of the current state of pharmacy technicians' involvement in mental health support and identifies strategies for optimizing their contributions to psychotropic medication management in alignment with Saudi Arabia's Vision 2030 goals. The findings highlight the essential roles and contributions of pharmacy technicians in supporting mental health, including medication dispensing, patient education, medication reconciliation, and collaboration with healthcare teams (Alshahrani & Alshehri, 2020; Desselle et al., 2020; Gable & Stunson, 2010). These findings are consistent with previous research on the important roles of pharmacy technicians in medication management and patient care (Bingham et al., 2018; Draime et al., 2020).

The review also identifies several key factors influencing the optimization of pharmacy technicians' contributions to mental health support, such as training and education, interprofessional collaboration, technology integration, and policy and regulatory support (Alshahrani & Alshehri, 2020; Bingham et al., 2018; Desselle et al., 2020). These findings are in line with previous research on the importance of specialized training, collaborative practice, and supportive policies in enabling pharmacy technicians to effectively contribute to patient care (Desselle et al., 2020; Gable & Stunson, 2010).

However, the review also reveals several challenges and barriers to pharmacy technicians' involvement in mental health support, such as limited mental health-specific training, workload pressures, and stigma (Alshahrani & Alshehri, 2020; Bingham et al., 2018; Desselle et al., 2020). These findings are consistent with previous research on the barriers to pharmacy technicians' effective engagement in patient care and the need for targeted interventions to address these challenges (Desselle et al., 2020; Gable & Stunson, 2010).

To address these challenges and align pharmacy technicians' roles with the goals of Vision 2030, the review proposes several recommendations, such as investing in specialized training and education programs, promoting interprofessional collaboration, leveraging technology, and supporting policy and regulatory changes (Alhabeeb et al., 2020; Alshahrani & Alshehri, 2020; Alshahrani et al., 2021). These recommendations are consistent with previous research on strategies for advancing pharmacy technicians' roles and optimizing their contributions to patient care (Bingham et al., 2018; Desselle et al., 2020; Gable & Stunson, 2010).

The findings of this review have significant implications for pharmacy practice, education, and policy in Saudi Arabia. Pharmacy practice should prioritize the integration of pharmacy technicians into mental health care teams and the provision of specialized training and support to enable their effective involvement in psychotropic medication management and mental health support. Pharmacy education should invest in the development of mental health-specific curricula and continuing education programs for pharmacy technicians to enhance their knowledge, skills, and competencies in this area. Pharmacy policy should support the development of clear guidelines and standards for pharmacy technicians' roles and responsibilities in mental health support, as well as the provision of adequate resources and support to enable their effective involvement.

The strengths of this review include the comprehensive search strategy, the inclusion of a diverse range of study designs and settings, and the use of a validated quality assessment tool. However, the review also has some limitations. The included studies were primarily conducted in hospital settings, and the findings may not be generalizable to other healthcare settings in Saudi Arabia. The review was limited to studies published in English, and relevant studies published in Arabic may have been missed. The heterogeneity of the included studies in terms of design, methods, and outcomes precluded the conduct of a meta-analysis, and the synthesis of the findings was limited to a narrative approach.

In conclusion, this systematic review provides valuable insights into the current state of pharmacy technicians' involvement in mental health support and identifies strategies for optimizing their contributions to psychotropic medication management in alignment with Saudi Arabia's Vision 2030 goals. The findings highlight the essential roles and contributions of pharmacy technicians in supporting mental health, and identify key factors influencing the optimization of their contributions, such as training and education, interprofessional collaboration, technology integration, and policy and regulatory support. The review also reveals several challenges and barriers to pharmacy technicians' involvement in mental health support, such as limited mental health-specific training, workload pressures, and stigma. The findings emphasize the importance of investing in the development of pharmacy technicians' roles and competencies in mental health support to improve the quality of care for patients with mental health disorders and contribute to the achievement of Vision 2030 goals in Saudi Arabia.

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