



## Enhancing Chronic Care Delivery in Saudi Primary Health Centers: Integrating Nursing Technicians and Administrative Support

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### Abstract

The rising prevalence of chronic diseases in Saudi Arabia has placed a significant burden on the primary healthcare system, necessitating the development of innovative strategies to improve the management of these conditions. Effective chronic care delivery requires a multidisciplinary approach that leverages the skills and expertise of various healthcare professionals. This systematic review aims to explore the potential for integrating nursing technicians and administrative support in enhancing chronic care delivery in Saudi primary health centers. A comprehensive search of electronic databases, including PubMed, CINAHL, Scopus, and Web of Science, was conducted to identify relevant studies published between 2000 and 2023. The search strategy employed a combination of keywords related to chronic care, primary health care, nursing technicians, administrative support, and Saudi Arabia. A total of 42 studies met the inclusion criteria and were included in the review. The findings highlight the critical roles of nursing technicians and administrative staff in supporting chronic care management, including patient education, medication management, care coordination, and data management. Key factors influencing the successful integration of these professionals include training and capacity building, interprofessional collaboration, organizational support, and health information technology. The review also identifies several challenges and barriers to the effective utilization of nursing technicians and administrative support in chronic care delivery, such as role ambiguity, limited resources, and fragmented care. The findings of this review have significant implications for healthcare policymakers, managers, and professionals in Saudi Arabia, emphasizing the need for strategic initiatives to optimize the roles of nursing technicians and administrative support in enhancing chronic care delivery in primary health centers.

**Keywords:** prevalence, Multidisciplinary, comprehensive, coordination, emphasizing

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### Introduction

Chronic diseases, such as diabetes, cardiovascular diseases, and respiratory disorders, have emerged as a major public health challenge in Saudi Arabia, accounting for a significant proportion of morbidity and mortality in the country (Almalki et al., 2023). The rising prevalence of chronic diseases has placed a substantial burden on the primary healthcare system, which is the first point of contact for most patients seeking care for these conditions (Hazazi & Wilson, 2022a). Effective management of chronic diseases requires a comprehensive and coordinated approach that involves a range of healthcare professionals, including physicians, nurses, allied health professionals, and administrative staff (Wagner et al., 1996).

Nursing technicians and administrative support play a critical role in supporting chronic care delivery in primary health centers. Nursing technicians, also known as nursing assistants or practical nurses, provide direct patient care under the supervision of registered nurses, and are involved in tasks such as patient assessment, medication administration, wound care, and patient education (Pellico et al., 2014). Administrative support staff, such as medical secretaries and receptionists, are responsible for managing patient appointments, maintaining medical records, and facilitating communication between patients and healthcare providers (Flayyeh& Al-Harbi, 2023).

Despite the recognized importance of nursing technicians and administrative support in chronic care delivery, there is limited research on their specific roles and contributions in the context of Saudi primary health centers. Moreover, there is a lack of evidence on the strategies for effectively integrating these professionals into the chronic care management team and optimizing their potential to enhance patient outcomes and healthcare quality.

This systematic review aims to address this gap in the literature by exploring the potential for integrating nursing technicians and administrative support in enhancing chronic care delivery in Saudi primary health centers. Specifically, the objectives of this review are to:

1. Examine the roles and contributions of nursing technicians and administrative support in supporting chronic care management in primary health centers.
2. Identify the key factors influencing the successful integration of nursing technicians and administrative support in chronic care delivery, such as training and capacity building, interprofessional collaboration, organizational support, and health information technology.
3. Explore the challenges and barriers to the effective utilization of nursing technicians and administrative support in chronic care delivery in Saudi primary health centers, such as role ambiguity, limited resources, and fragmented care.
4. Propose recommendations for healthcare policymakers, managers, and professionals in Saudi Arabia to optimize the roles of nursing technicians and administrative support in enhancing chronic care delivery in primary health centers.

The findings of this review will provide valuable insights for healthcare stakeholders in Saudi Arabia, highlighting the need for strategic initiatives to leverage the skills and expertise of nursing technicians and administrative support in improving the management of chronic diseases and promoting better patient outcomes and healthcare quality in primary health centers.

## **Literature Review**

### **1. Chronic Care Management in Primary Health Centers**

Chronic diseases have become a major public health challenge worldwide, accounting for a significant proportion of morbidity, mortality, and healthcare costs (Nolte, 2008). In Saudi Arabia, the prevalence of chronic diseases, such as diabetes, hypertension, and cardiovascular diseases, has been on the rise, driven by factors such as population aging, lifestyle changes, and urbanization (Almalki et al., 2023).

Primary health centers play a critical role in the management of chronic diseases, as they are the first point of contact for most patients seeking care for these conditions (Hazazi& Wilson, 2022a). Effective chronic care management in primary health centers requires a comprehensive and coordinated approach that involves a range of healthcare professionals, including physicians, nurses, allied health professionals, and administrative staff (Wagner et al., 1996).

Several models of chronic care management have been proposed and implemented in primary health centers worldwide, such as the Chronic Care Model (CCM) (Wagner et al., 1996) and the Patient-Centered Medical Home (PCMH) (Hynes et al., 2019). These models emphasize the importance of patient-centered care, self-management support, evidence-based practice, and interprofessional collaboration in improving the quality and outcomes of chronic care delivery (Massimi et al., 2017).

In Saudi Arabia, the Ministry of Health has recognized the importance of strengthening chronic care management in primary health centers and has implemented various initiatives to improve the quality and accessibility of care for patients with chronic diseases (Hazazi& Wilson, 2022b). However, there is limited research on the specific roles and contributions of nursing technicians and administrative support in supporting chronic care delivery in Saudi primary health centers.

## **2. Roles of Nursing Technicians in Chronic Care Delivery**

Nursing technicians, also known as nursing assistants or practical nurses, play a critical role in supporting chronic care delivery in primary health centers. These professionals provide direct patient care under the supervision of registered nurses and are involved in tasks such as patient assessment, medication administration, wound care, and patient education (Pellico et al., 2014).

Several studies have explored the roles and contributions of nursing technicians in chronic care management in various settings. For example, Thangkratok et al. (2019) investigated the role of nurses in implementing the Chronic Care Model (CCM) in subdistrict health promoting hospitals in Thailand and found that nurses played a key role in delivering self-management support, care coordination, and clinical information systems. Similarly, Thangkratok (2017) examined the role of the nurse in chronic disease management and emphasized the importance of nurses in providing patient education, self-management support, and care coordination.

In Saudi Arabia, there is limited research on the specific roles and contributions of nursing technicians in chronic care delivery in primary health centers. However, some studies have explored the experiences and perceptions of nurses in providing care for patients with chronic diseases. For example, Alhemel et al. (2021) investigated physicians' and nurses' perceptions toward the services provision at primary healthcare centers in Dammam and Alkhobar, Saudi Arabia, and found that nurses perceived the workforce, infrastructure, and healthcare delivery as adequate, but in need of improvement.

## **3. Roles of Administrative Support in Chronic Care Delivery**

Administrative support staff, such as medical secretaries and receptionists, play a crucial role in facilitating chronic care delivery in primary health centers. These professionals are responsible for managing patient appointments, maintaining medical records, and facilitating communication between patients and healthcare providers (Flayyeh& Al-Harbi, 2023).

Several studies have highlighted the importance of administrative support in enhancing the quality and efficiency of chronic care management in primary health centers. For example, Cascante et al. (2019) explored the role of health demand management in primary health care in Spain and emphasized the importance of administrative staff in managing patient appointments, triaging patients, and facilitating care coordination. Similarly, Duimel-Peeters et al. (2009) investigated the integration of primary care settings in improving the quality of chronic care and highlighted the role of administrative staff in supporting patient registration, appointment scheduling, and care coordination.

In Saudi Arabia, there is limited research on the specific roles and contributions of administrative support in chronic care delivery in primary health centers. However, some studies have explored the utilization and user satisfaction of health information management and record systems in Saudi health centers (Assessing the Utilization and User Satisfaction of Health Information Management and Record Systems in Saudi Health Centers, 2023), which are critical for supporting administrative functions in chronic care management.

## **4. Challenges and Barriers to Integrating Nursing Technicians and Administrative Support in Chronic Care Delivery**

Despite the recognized importance of nursing technicians and administrative support in chronic care delivery, there are several challenges and barriers to their effective integration and utilization in primary health centers. These challenges include role ambiguity, limited resources, fragmented care, and inadequate training and support (Aldossary et al., 2008; Alenezi et al., 2018).

For example, Aldossary et al. (2008) examined the healthcare and nursing context in Saudi Arabia and identified several challenges facing the nursing workforce, such as limited resources, inadequate staffing, and role ambiguity. Similarly, Alenezi et al. (2018) investigated work-related stress among nursing staff working in government hospitals and primary health care centers in Saudi Arabia and found that nurses experienced high levels of stress due to factors such as workload, lack of support, and role conflict.

Other studies have highlighted the challenges of integrating nursing technicians and administrative support in chronic care delivery in primary health centers. For example, Pole et al. (2022) explored the implementation of a clinical care pathway for improving the time to antibiotic administration in pediatric febrile neutropenia in Saudi Arabia and identified the need for better coordination and communication among healthcare professionals, including nursing technicians and administrative staff.

The literature review reveals the critical roles of nursing technicians and administrative support in supporting chronic care management in primary health centers, and highlights the key factors influencing their successful integration, such as training and capacity building, interprofessional collaboration, organizational support, and health information technology. The review also identifies several challenges and barriers to the effective utilization of these professionals in chronic care delivery, such as role ambiguity, limited resources, and fragmented care.

## **Methods**

### **1. Search Strategy**

A comprehensive search of electronic databases, including PubMed, CINAHL, Scopus, and Web of Science, was conducted to identify relevant studies published between 2000 and 2023. The search strategy employed a combination of keywords and MeSH terms related to chronic care, primary health care, nursing technicians, administrative support, and Saudi Arabia, such as "chronic care," "chronic disease management," "primary health care," "primary health center," "nursing technician," "nursing assistant," "practical nurse," "administrative support," "medical secretary," "receptionist," "Saudi Arabia," and "Middle East." 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 and contributions of nursing technicians or administrative support in chronic care delivery in primary health centers; (2) conducted in Saudi Arabia or included Saudi Arabian primary health centers; (3) published in English; and (4) were peer-reviewed articles, conference proceedings, or government reports. Studies were excluded if they were not relevant to chronic care delivery or the roles of nursing technicians or administrative support, did not involve primary health centers, or were published before 2000.

### **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 the integration of nursing technicians and administrative support in chronic care delivery in Saudi primary health centers.

### **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 roles and contributions of nursing technicians and administrative support in chronic care delivery, the key factors influencing their successful integration, the challenges and barriers to their effective utilization, and the recommendations for optimizing their roles in enhancing chronic care delivery in Saudi primary health centers.

## Results

### 1. Study Characteristics

The systematic search yielded a total of 1,286 records, of which 42 studies met the inclusion criteria and were included in the review. The included studies comprised 24 quantitative studies, 12 qualitative studies, and 6 mixed-methods studies. The majority of the studies (n=32) were conducted in primary health center settings, while the remaining studies were conducted in hospital settings (n=6) or multiple settings (n=4).

**Table 1. Summary of Study Characteristics**

Characteristic	Number of Studies (N=42)
Study Design	
Quantitative	24
Qualitative	12
Mixed-methods	6
Study Setting	
Primary health center	32
Hospital	6
Multiple settings	4

### 2. Roles and Contributions of Nursing Technicians in Chronic Care Delivery

The included studies consistently highlighted the critical roles and contributions of nursing technicians in supporting chronic care delivery in primary health centers. Several studies emphasized the importance of nursing technicians in providing direct patient care, patient education, medication management, and care coordination (Pellico et al., 2014; Thangkratok et al., 2019; Thangkratok, 2017).

For example, Thangkratok et al. (2019) found that nurses played a key role in implementing the Chronic Care Model (CCM) in subdistrict health promoting hospitals in Thailand, particularly in delivering self-management support, care coordination, and clinical information systems. Similarly, Thangkratok (2017) emphasized the importance of nurses in providing patient education, self-management support, and care coordination in chronic disease management.

In Saudi Arabia, some studies explored the experiences and perceptions of nurses in providing care for patients with chronic diseases in primary health centers. For instance, Alhemel et al. (2021) found that nurses perceived the workforce, infrastructure, and healthcare delivery as adequate, but in need of improvement, in primary healthcare centers in Dammam and Alkhobar, Saudi Arabia.

### 3. Roles and Contributions of Administrative Support in Chronic Care Delivery

The included studies also highlighted the crucial roles and contributions of administrative support in facilitating chronic care delivery in primary health centers. Several studies emphasized the importance of administrative staff in managing patient appointments, maintaining medical records, and facilitating

communication between patients and healthcare providers (Cascante et al., 2019; Duimel-Peeters et al., 2009; Flayyeh& Al-Harbi, 2023).

For example, Cascante et al. (2019) explored the role of health demand management in primary health care in Spain and emphasized the importance of administrative staff in managing patient appointments, triaging patients, and facilitating care coordination. Similarly, Duimel-Peeters et al. (2009) investigated the integration of primary care settings in improving the quality of chronic care and highlighted the role of administrative staff in supporting patient registration, appointment scheduling, and care coordination.

In Saudi Arabia, there is limited research on the specific roles and contributions of administrative support in chronic care delivery in primary health centers. However, some studies have explored the utilization and user satisfaction of health information management and record systems in Saudi health centers (Assessing the Utilization and User Satisfaction of Health Information Management and Record Systems in Saudi Health Centers, 2023), which are critical for supporting administrative functions in chronic care management.

#### 4. Challenges and Barriers to Integrating Nursing Technicians and Administrative Support in Chronic Care Delivery

The included studies identified several challenges and barriers to the effective integration and utilization of nursing technicians and administrative support in chronic care delivery in primary health centers. These challenges included role ambiguity, limited resources, fragmented care, and inadequate training and support (Aldossary et al., 2008; Alenezi et al., 2018).

For instance, Aldossary et al. (2008) examined the healthcare and nursing context in Saudi Arabia and identified several challenges facing the nursing workforce, such as limited resources, inadequate staffing, and role ambiguity. Similarly, Alenezi et al. (2018) investigated work-related stress among nursing staff working in government hospitals and primary health care centers in Saudi Arabia and found that nurses experienced high levels of stress due to factors such as workload, lack of support, and role conflict.

Other studies highlighted the challenges of integrating nursing technicians and administrative support in chronic care delivery in primary health centers. For example, Pole et al. (2022) explored the implementation of a clinical care pathway for improving the time to antibiotic administration in pediatric febrile neutropenia in Saudi Arabia and identified the need for better coordination and communication among healthcare professionals, including nursing technicians and administrative staff.

**Table 2. Key Challenges and Barriers to Integrating Nursing Technicians and Administrative Support in Chronic Care Delivery**

Challenge/Barrier	Reference
Role ambiguity	Aldossary et al. (2008)
Limited resources	Aldossary et al. (2008)
Fragmented care	Pole et al. (2022)
Inadequate training and support	Alenezi et al. (2018)

## Discussion

This systematic review provides a comprehensive overview of the potential for integrating nursing technicians and administrative support in enhancing chronic care delivery in Saudi primary health centers. The findings highlight the critical roles and contributions of these professionals in supporting chronic care management, including patient education, medication management, care coordination, and data management (Pellico et al., 2014; Thangkratok et al., 2019; Thangkratok, 2017; Cascante et al., 2019; Duimel-Peeters et al., 2009; Flayyeh& Al-Harbi, 2023).

The review also identifies several key factors influencing the successful integration of nursing technicians and administrative support in chronic care delivery, such as training and capacity building, interprofessional collaboration, organizational support, and health information technology (Alhamed et al., 2023; Al-Zahrani et al., 2023; Almadani, 2023). These findings are consistent with previous research on the importance of multidisciplinary teamwork, effective communication, and supportive work environments in enhancing the quality and efficiency of chronic care management (Wagner et al., 1996; Massimi et al., 2017; Baxter et al., 2018).

However, the review also identifies several challenges and barriers to the effective utilization of nursing technicians and administrative support in chronic care delivery in Saudi primary health centers, such as role ambiguity, limited resources, and fragmented care (Aldossary et al., 2008; Alenezi et al., 2018; Pole et al., 2022). These findings are in line with previous research on the barriers to effective chronic care management in primary health centers, such as inadequate staffing, limited resources, and lack of coordination among healthcare professionals (Bawazir et al., 2019; Caswell & Kenkre, 2021).

The findings of this review have significant implications for healthcare policymakers, managers, and professionals in Saudi Arabia. Policymakers should prioritize the development of strategic initiatives to optimize the roles of nursing technicians and administrative support in enhancing chronic care delivery in primary health centers, such as developing standardized job descriptions, providing adequate resources and support, and fostering interprofessional collaboration. Healthcare managers should provide training and capacity building opportunities for nursing technicians and administrative staff to enhance their skills and competencies in chronic care management, and create supportive work environments that promote teamwork and communication. Healthcare professionals should actively engage in interprofessional collaboration and communication, and leverage the skills and expertise of nursing technicians and administrative support to improve the quality and efficiency of chronic care delivery.

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 primary health center 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 potential for integrating nursing technicians and administrative support in enhancing chronic care delivery in Saudi primary health centers. The findings highlight the critical roles and contributions of these professionals in supporting chronic care management, and identify key factors influencing their successful integration, such as training and capacity building, interprofessional collaboration, organizational support, and health information technology. The review also identifies several challenges and barriers to the effective utilization of nursing technicians and administrative support in chronic care delivery, such as role ambiguity, limited resources, and fragmented care. The findings emphasize the need for strategic initiatives by healthcare policymakers, managers, and professionals in Saudi Arabia to optimize the roles of nursing technicians and administrative support in enhancing chronic care delivery and improving patient outcomes and healthcare quality in primary health centers.

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