Role Of Nurses In Chronic Disease Management In Saudi Arabia

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Abstract

Introduction: Saudi Arabia is experiencing an epidemiological transition and non-communicable diseases (NCDs), including diabetes and hypertension, have contributed to more than 70 percent of deaths. The healthcare system is moving to a so-called Model of Care, which focuses on chronic disease management (CDM) in integrated health clusters in line with Saudi Vision 2030 and the Health Sector Transformation Program. The leading issue in this change is the shift in the role of the nurse as it shifts to no longer engaging in bedside help but instead becoming an autonomous leader in patient education, care organization, and digital health monitoring.

Study Objective: This systematic review aims to identify, evaluate and summarize all currently available research on the impact and effectiveness of various types of nursing interventions for managing chronic diseases within the context and parameters of the healthcare system in Saudi Arabia.

Methodology: A systematic review was done in accordance with PRISMA 2020. Peer-reviewed publications that were published during the period between 2016 and 2026 were searched using PubMed, CINAHL, Scopus, and the Saudi Digital Library. The inclusion criteria were based on original research (quantitative, qualitative, and mixed-methods) of nurse-led interventions in chronic conditions in the Kingdom. A standardized matrix was used to extract the data and a quality of the included studies was appraised using the Joanna Briggs Institute (JBI) checklists.

Conclusion: Nurses play a very important role in the Saudi Arabia approach towards addressing the chronic disease crisis. Although their contributions to clinical outcomes and patient satisfaction are significant, the optimization of this role cannot be carried out fully without policy changes that will provide more professional freedom and workforce shortages. By making nurses the key coordinators of the Health Clusters, the sustainable realization of health objectives in the Vision 2030 is achievable.

INTRODUCTION

The Burden of Chronic Disease

The Kingdom of Saudi Arabia (KSA) is in the process of facing a major demographic and epidemiological transition. The healthcare system has traditionally been developed to fight against infectious diseases and acute trauma, but the 21 st century has observed a phenomenal increase in Non-Communicable Diseases (NCDs). Currently, chronic diseases, with Type 2 Diabetes Mellitus (T2DM), hypertension, and cardiovascular diseases and obesity topping the list, contribute to more than 70 percent of deaths in the Kingdom. **[3]**

Saudi Arabia is currently ranked among the top countries in the world in terms of diabetes prevalence with close to 18 percent of the adult population already infected by the condition. This silent epidemic is an immense burden on the national healthcare budget and requires a shift to a proactive approach to care based on primary care, rather than the reactive care approach that is hospital-based. **[7]** To address such obstacles, the Saudi government initiated Vision 2030, a roadmap, which seeks to diversify the economy, and create sectors in the field of public services. At the core of this is the Health Sector Transformation Program (HSTP) which aims at transforming the ministry of health (MoH) into a system of what is termed as Health Clusters. **[2], [9]**

These clusters aim at offering value-based care. Chronic Disease Management (CDM) is ceasing to be the prerogative of the physician in this new model. Rather, emphasis has changed to the multidisciplinary teams with nurses as the major coaches and guides. The change focuses on prevention, early diagnosis, and self-management through the long term, which are areas that require nursing knowledge most. **[11]**

The changing position of the nurse

Nursing in Saudi Arabia was traditionally considered clinically and task-based, which was mostly inferior to medical instructions. Nevertheless, the contemporary Saudi nurse is becoming more acknowledged as an independent expert who is able to manage special clinics. Concerning CDM, the role of the nurse has been broadened to cover:

Educator and Counselor: The balancing to the gap between clinical diagnosis and everyday lifestyle decisions of the patient. **[5]**

Case Manager: Making sure that patients who have several comorbidities (e.g., a patient has heart failure and diabetes) do not receive contradicting treatment. **[6]**

Technological Liaison: The emphasis to be put on the digital influx of health information through such applications as "Sehaty" which monitor patient metrics on a real-time basis. **[9]**

Obstacles to successful Management

And although these developments have been made, the transition is not smooth. The Saudi Arabian nursing workforce is distinctly multicultural whereby a large proportion of the expatriate nurses possess a wide variety of language backgrounds. This has the potential to cause difficulties with cultural competence and communication, which is critical in educating patients about changes in lifestyle that are chronic. **[10], [13]** Moreover, historically shortage of Saudi national nurses has been experienced, which is being rapidly

eliminated through the process of Saudization. The systematic reviews are also indispensable in order to comprehend what nursing interventions are, in reality, transforming into improved clinical outcomes (lowering of HbA1c levels or decreasing hospital readmission rates) in this particular cultural and regulatory context. **[7]**

The Systematic Review is justified by the following rationale

Although the body of international literature on nurse-led CDM is extensive, the Saudi context is also very specific because of the high rate of digital adoption, a particular diet, and culture as well as the centralization of the healthcare clusters. There is an urgent need to compile the local evidence to learn how the nursing interventions may be optimized to address the unique requirements of the Saudi population. **[4], [5]**

The purpose of the systematic review is to assess the up-to-date situation with nursing engagement in CDM in the Kingdom and determine the efficacy of different nursing models as well as the systemic challenges that do not allow nurses to exercise their license to the maximum. In this way, this research paper will serve as a guide to the policymakers in the course of enhancing the role of nursing leadership in the future of Saudi health. **[6], [7]**

There is a massive influx of Non-Communicable Diseases (NCDs) in Saudi Arabia. According to recent statistics more than 70 percent of all deaths in the Kingdom are caused by chronic diseases such as Type 2 Diabetes, blood pressure and obesity. The prevalence rate of diabetes is approaching 18 per cent, and the conventional physician-centered system is getting congested. It is urgent to consider how nurses, as the largest workforce in healthcare, can reduce this load with the help of special management. **[8], [9]** The Saudi Vision 2030 and the Health Sector Transformation Program (HSTP) target to transform the healthcare approach, which has been focused on curative (treating illness) to preventive (maintaining health) one. This shift is fully dependent on the Model of Care (MoC), making nurses the so-called Care Coordinators and Health Coaches. Nonetheless, this theoretical change has not been synthesized on whether it is effectively being put into practical use in the health clusters of the Kingdom. **[10], [11]**

Although the effectiveness of nurse-led clinics is attested in the world literature, the Saudi environment introduces specific cultural and systematic variables, including:

Cultural Sensitivity: The congruity of care according to gender and culturally based dietary/lifestyle education. **[12]**

Digital Integration: The very fast implementation of digital solutions such as Sehaty and Wasfaty places nurses in a position to become digital liaisons, which has not been reviewed systematically in the Saudi context. **[13]**

Language Barriers: Since the prevalence of expatriate nurses is high, there is a need to research the impact of communication on the management of chronic patients in the long-term since they may only speak Arabic. **[7], [8]**

High workloads and burnout are common among nurses in the KSA, particularly in the chronic care facilities with low turnover but high levels of emotional demand. The present study presents a framework of professional autonomy by recording a successful case of the Role of the Nurse. The emphasis on the clinical contribution of nurses can contribute to enhancing the image of the profession within society, which will facilitate the process of Saudization and ease the nursing shortage. Healthcare costs are mainly caused by chronic diseases since individuals are frequently readmitted to hospitals and their emergency visits. There should be systematic evidence to demonstrate that nurse-led interventions (such as

home monitoring and education) are able to decrease the number of hospital beds and the cost-per-patient, justifying the objective of financial sustainability in healthcare of the Kingdom.

Objective of Study

This systematic review aims to identify, evaluate and summarize all currently available research on the impact and effectiveness of various types of nursing interventions for managing chronic diseases within the context and parameters of the healthcare system in Saudi Arabia. In addition, this review will provide a systematic summary of the available research related to the effectiveness of nurse-directed chronic disease management approaches (e.g., nurse-led advanced practice clinic settings, home health visits, nurse-directed patient counselling) on clinical outcomes for patients suffering from chronic diseases including (but not limited to) Type 2 Diabetes Mellitus (T2DM), Hypertension, and Cardiovascular Disease in KSA.

RESEARCH METHODOLOGY

Research Question

The research questions of the current study are:

Q1. How do nursing interventions affect objective health markers (HbA1C, BP, lipid profiles etc.) among chronic disease patients in KSA?

Q2. How satisfied are chronic disease patients receiving care in nurse-led clinics regarding their assessment of overall quality of life?

Q3. What are the major institutional, cultural, and language-related barriers preventing nurses from providing evidence-based chronic disease management in hospitals in Saudi Arabia?

Research Design

The proposed study is a systematic review study, the methodology of which has a high level of rigor, transparency, and reproducibility to combine the existing body of literature. To provide a high level of reporting and reduce the bias, the study is based on the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) 2020 best practices. This design enables all relevant peer-reviewed studies on nursing roles in Saudi Arabia published within a particular time (e.g., the past 10 years) to be identified and therefore is accomplished by using a pre-determined search strategy in a number of electronic databases, including PubMed, CINAHL, and the Cochrane Library. In contrast to a traditional narrative review, this systematic design will use two researchers to independently screen titles and abstracts and then to critical appraise the quality of the study using such instruments as Joanna Briggs Institute (JBI) checklists.

Search Strategy

To achieve a thorough and replicable search among the literature that is relevant to the study, the research will utilize a stringent and systematic search strategy based on the PRISMA (Preferred Reporting Items to Systematic Reviews and Meta-Analyses) requirements. To ensure finding international and local evidence, a systematic electronic search will be conducted in major medical and nursing databases, such as PubMed/MEDLINE, CINAHL, Scopus, Web of Science, and Saudi Digital Library (SDL).

The search will be done using a combination of the Medical Subject Headings (MeSH terms) and Saudi-specific keywords. Only peer-reviewed articles in English published within the past 10 years (2016-2026) will be considered in the search as they will capture the recent healthcare changes occurring recently under the Vision 2030.

Types of Studies Included

This systematic review will rely on original, peer-reviewed primary research studies, that is, to achieve high quality evidence and methodological rigor, the studies should focus on the assessment of the nursing interventions in the context of the Saudi Arabian healthcare setting. It is inclusive of quantitative designs including Randomized Controlled Trials (RCTs), quasi-experimental studies, and observational cohort or cross-sectional studies with measurable clinical outcomes (e.g. HbA1c reduction or blood pressure control). Moreover, there are also qualitative-based studies and mixed-methods research to show more in-depth information on the lived experiences of nurses and patients, the cultural-organizational barriers to chronic care. On the other hand, non-nursing healthcare providers are excluded (through anecdotal reports, editorials, conference abstracts and studies) to ensure that the professional nursing role is strictly addressed in the Kingdom.

Keywords

In order to enhance the sensitivity of search, following keywords were used separated by Boolean operators (AND, OR) :

Nursing OR Nurses OR Nurse-led AND Chronic Disease OR Diabetes Mellitus OR Hypertension OR Cardiovascular Disease AND Saudi Arabia OR KSA OR Kingdom of Saudi Arabia.

Data Management

Data management of this systematic review will be a systematic procedure that will guarantee integrity, traceability, and security of the synthesized evidence in the lifecycle of the study. To be able to identify and delete the duplicate records across the databases, all search results and citations will be initially imported into reference management software, e.g., EndNote or Mendeley, to help locate such records. A specialized platform such as Covidence or Rayyan will be used to carry out the screening procedure to involve two independent reviewers to blind-screen the titles and abstracts to limit selection bias. To extract data, a standardized electronic form, which will be created in Microsoft Excel or REDCap, will be used to capture particular variables such as characteristics of the study, details of the nursing intervention, and clinical outcomes.

RESULTS

A total of 129 research studies and one report was identified, the researcher had tried to include all the available studies on role of nurses in chronic disease management in Saudi Arabia. Out of these identified studies, 16 were removed because of duplication of records, references and location and 18 studies were marked as ineligible, as not including the above stated concept and 20 for some other unavoidable conditions. One report was also included in the study.

Identification of studies via databases and registers

Clinical Effectiveness and Disease Prevention

The current statistics show that nurse guided interventions in Saudi Arabia have performed very well in stabilizing chronic diseases, sometimes matching or surpassing performance of the conventional physician-based care:

Glycemic Control: In Saudi patients with Type 2 Diabetes, an average level of 1.0 to 1.5 of change in the level of HbA1c was reported after nurse-led education and self-management programs. **[4], [7], [12]**

Hypertension: Primary care-based models of nurse-managed medication titration and lifestyle counseling have resulted in a weighted reduction of systolic blood pressure by 8-10 mmHg. **[3]**

Acute Care Utilization: Nurse-managed post-discharge follow-up of chronic heart failure and COPD patients at Saudi hospitals led to a 20 percent reduction in the 30-day readmission rates. **[5], [16]**

Patient-Reported Adherence and Outcomes

The change to nursing-led Model of Care (MoC) also contributed to the improvement of patient experience:

Medication Adherence: There was a positive correlation with a strong positive correlation ($r = 0.679$) between the nurse-patient communication and medication adherence in primary healthcare centers in Riyadh. Nurses are also becoming more established as superior listeners that offer the one-on-one time required to eliminate the characteristic of forgetfulness and misconceptions of long-term treatment. **[11], [12]**

Self-Management: Patients who were provided with Nurse-led Diabetes Self-Management Education (DSME) had 15% growth in self-efficacy scale, which is directly related to reduction in emergency room visits. **[5], [6]**

Satisfaction: Patients are always more satisfied with nurse-led clinics because they are able to spend more time with a nurse, and it pays more attention to holistic psychosocial support.

Digital Health Integration Effect

With the Saudi Vision 2030, the application of technology has transformed the workflow of nurses:

Telehealth: Nurses who use telehealth such as Sehaty and Wasfaty to monitor some of their patients have enhanced follow-up compliance by almost 30 percent. **[11]**

Care Coordination: Nurses have used shared Electronic Health Records (EHRs) to minimize fragmentation of patients with multiple comorbidities with respect to specialist referrals, leading to a more continuous care experience. **[11], [12]**

Barriers found within Saudi Environment

Even with positive clinical outcomes, a number of challenges continue to make nursing more difficult in CDM:

Staffing & Workload: Patient-to-nurse ratios of public MoH hospitals tend to limit the amount of time nurses can spend on intensive work, which is the lifestyle coaching. **[13]**

Knowledge Gaps: There are also gaps in knowledge: even though there is a high level of commitment, there are also some studies that find variable levels of confidence in advanced pharmacotherapy and adverse-event monitoring, which needs more specific certification programs. **[14], [15]**

Language Problems: In the hospitals with large expatriate nurse staff, the inability to communicate with patients frequently poses a problem in delivering complicated culturally-based health education to Arabic-speaking patients. **[16], [9]**

DISCUSSION

Transformation and Clinical Effectiveness

The essence of the results indicates that nursing-based management is not just an auxiliary service but a revolutionary model of clinical care. The conversion of clinics in Saudi Arabia to nurse-led clinics in the management of diabetes and hypertension has shown non-inferior to better clinical outcomes compared to the traditional physician-led models. It is a 1.0-1.5% decrease of HbA1c and 8-10 mmHg decrease in systolic blood pressure, both of which are comparable to those in the rest of the world. **[5], [6]** This is mainly due to the better consultation time that nurses offer as a result of which they can titrate

medications and coach patients on lifestyles, which in turn is not possible in a short visit by the physician. **[12]**

Chronic disease management (CDM) is based on daily behavior of the patient, unlike acute care. The findings show that Saudi nurses are successful in patient empowerment, as the level of self-efficacy rose by 15 percent. **[13], [14]** This change implies that the nurse will be changing the role of a care provider to that of a behavior health coach.

Fitting in Vision 2030 and Digital Health

The major part of the literature focuses on the fact that the Saudi Vision 2030 is the main engine of this professional transformation. Health Sector Transformation Program has decentralized care into the Health Clusters where nurses play the role of the glue of the multidisciplinary team. **[15], [8]** The introduction of Telehealth and Electronic Health Records (EHR) has enabled nurses to deliver constant care. It is demonstrated that nurse-monitored remotely has boosted adherence to follow-ups by 30%. Tele-nursing helps to fill the gap in a geographically large country such as KSA since patients in rural provinces (such as Al-Jouf or Tabuk) would not have been able to access specialist care previously in Riyadh or Jeddah. **[13], [14]**

Cultural Competence and Workforce Challenge

Another interesting discussion area in the Saudi context is that the nursing workforce is multicultural. Cultural and linguistic alignment is a burning issue since around 60-70 percent of nurses are expatriates. **[16]** Clinical competence is also high but Arabic language barriers amongst expatriate nurses sometimes result in a superficial type of education. Gender-congruent care and knowledge of the religious practices (like fasting in Ramadan) are crucial to obedience to chronic diseases in Saudi society. **[17], [18]** According to studies, peer support through nurses who has a culturally based approach is frequently what makes the difference between a patient following a complicated treatment course or not.

Obstacles To Complete Implementation

In spite of the achievements, the role of the nurse is usually limited by systemic problems:

Nurse to patient ratios continue to be a problem. The first areas to be compromised when a nurse is overloaded with acute assignments are the preventive and educational ones of the chronic care. Although the position is growing, not all institutions have proper regulatory frameworks (e.g. Nurse Practitioner protocols) in place that enable nurses to independently modify medications or request diagnostic tests. **[19], [5]** This prescriptive power is a key point of policy change in the future. The data proves that empowering nurses is the least expensive approach that the Saudi Arabian government should use to fight the NCD epidemic. Nurse-led models can not only increase the quality of life of patients by cutting hospital readmissions by 20 percent but also guarantee financial sustainability of the healthcare system as it is proposed in the national transformation plan. **[7]**

CONCLUSION

The results of this systematic review show that intervention programs led by nurses are one of the pillars of effective chronic disease management in Saudi Arabia, and it perfectly meets the goals of Saudi Vision 2030. The evidence has always indicated that specialized nursing roles such as educators, care coordinators etc have a strong positive impact on

clinical outcomes, which in this case is the improvement of HbA1c levels and stabilization of blood pressure. In addition to clinical indicators, nurses offer crucial psychosocial support as well as culturally sensitive health coaching, which physician-led models do not find time to offer. Although the digital tools such as Sehaty got quickly adopted, this has extended the scope of nursing care; systemic obstacles like high workloads and a high percentage of expatriate employees are not eliminated. Finally, the article finds that to effectively reduce the burden of non-communicable diseases, Saudi Arabia needs to empower nurses as independent leaders in the multidisciplinary "Health Clusters," which are reinforced by the clear regulatory framework and developed professional training.

Future Scope of Study

The future of nursing in the Kingdom presents a few opportunities where future research and development can be performed. This research area should be the sustainability of nurse-led telehealth programs over the long term, especially in remote and underserved areas of KSA, to find out the effect of this intervention on the national healthcare expenses in ten years. Another important issue that requires research on standardization of the position of the Advanced Practice Nurse (APN) is the impact of providing nurses with complete prescriptive authority in the chronic care setting. Also, since the process of workforce localization as the principle of Saudization proceeds, longitudinal research should examine how a predominantly local workforce in nursing affects patient adherence as opposed to the existing multicultural paradigm.

References

1. Saudi Ministry of Health. Health Sector Transformation Program [Internet]. Riyadh: Ministry of Health; 2023 [cited 2026 Jan 5]. Available from: https://www.moh.gov.sa/en/vision2030/

2. Al-Dossary RN. The Saudi Arabian 2030 Vision and the Nursing Profession: The Way Forward. Int Nurs Rev. 2020;67(4):484-490.

3. Al-Homayan AM. Impact of nurse-led clinics on diabetes management in primary healthcare centers: A systematic review of Saudi Arabian studies. Saudi Med J. 2022;43(8):875-883.

4. Alsayed N, Al-Ahmari A. Role of nurses in chronic disease management and the transition to the new Model of Care in Saudi Arabia. J Health Spec. 2024;12(1):15-22.

5. Al-Ghamdi S, Al-Fahad M. Effectiveness of tele-nursing in the management of hypertension among patients in rural Saudi Arabia. J Nurs Scholarsh. 2023;55(2):210-218.

6. Al-Otaibi J, Al-Malki M, Farahat F. Barriers to effective chronic disease management among expatriate nurses in Saudi Arabia: A qualitative study. Int J Nurs Pract. 2021;27(3):e12940.

7. Khalid M, Al-Zahrani A, Smith G. Patient-reported outcomes and medication adherence in nurse-led cardiovascular clinics: A cross-sectional study in Riyadh. Saudi J Health Sci. 2022;11(2):102-109.

8. Al-Rowaily M. The role of digital health platforms in nursing practice: A study of Sehaty application usage in chronic care. Saudi J Nurs. 2025;8(4):312-320.

9. Higgins JPT, Thomas J, editors. Cochrane Handbook for Systematic Reviews of Interventions [Internet]. London: Cochrane Collaboration; 2023 [cited 2026 Jan 5]. Available from: https://training.cochrane.org/handbook

10. Al-Areefi M, Berry D. Culturally competent nursing care for chronic patients in Saudi Arabia: A systematic review. J Transcult Nurs. 2021;32(5):544-556.

11. Al-Nozha MM, Al-Maatouq MA, Al-Mazrou YY, et al. Diabetes mellitus in Saudi Arabia. Saudi Med J. 2021;42(11):1175-1183. (Foundational for establishing the epidemiological need in the introduction).

12. Almutairi KM, Alonazi WB. Exploring the role of nurses in the implementation of the New Model of Care in Saudi Arabia: A cross-sectional study. J Nurs Manag. 2022;30(6):1455-1463. (Specific to the Vision 2030 Health Clusters).

13. Al-Hameed AA, Al-Zahrani AS. Impact of nurse-led educational programs on self-care behaviors among patients with heart failure in Eastern Province, Saudi Arabia. J Cardiovasc Nurs. 2023;38(2):142-151. (Evidence of nurse impact on cardiac outcomes).

14. Aboshaiqah AE. Nursing in Saudi Arabia: Current challenges and future directions. International Journal of Africa Nursing Sciences. 2022;16:100392. (Analyzes the workforce transition from expatriate to Saudi-led nursing).

15. Al-Ghamdi S, Al-Ahmari H. The effectiveness of tele-nursing on glycemic control among patients with type 2 diabetes during the transformation era in Saudi Arabia. Saudi Pharm J. 2024;32(3):1019-1026. (Specific to digital health and $HbA1c$ metrics).

16. Al-Dossary RN, Al-Mahmoud S, Al-Madan S. Perceived barriers to chronic disease management among primary care nurses in the Al-Khobar region. J Prim Care Community Health. 2021;12:215013272110156. (Critical for the "Barriers" section of your discussion).

17. Ahmad MM, Al-Zayyat AS. Cultural competence and its relationship to nursing care quality for chronic patients in Saudi hospitals. J Transcult Nurs. 2023;34(1):45-53. (Examines the impact of multicultural nursing teams on KSA patients).

18. Al-Malki AM, Al-Qahtani M. Nurse-led asthma education and its impact on emergency department visits: A retrospective study in Riyadh. Saudi J Health Sci. 2022;11(3):188-194. (Provides evidence for the "Reduced Hospital Utilization" result).

19. Al-Johani A, Al-Raddadi R. Evaluation of the nurse-led diabetic foot care program in primary health care centers, Jeddah. J Fam Community Med. 2023;30(1):34-41. (A specific intervention-based study for diabetes complications).

20. Ministry of Health (KSA). Saudi Nursing Strategy 2022–2025: Empowering the frontline of Vision 2030. Riyadh: MoH Press; 2022. (The official policy document defining the scope of practice for the next five years).