Role Of Nurses In Chronic Disease Management In Saudi Arabia

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Abstract

Introduction: A major problem for the health system of Saudi Arabia is the increasing number of chronic, non-communicable diseases. Some chronic, non-communicable diseases include Type 2 diabetes and cardiovascular disease. As part of the Health Sector Transformation Program of Saudi Vision 2030, a move away from providing acute care in hospitals and to providing chronic disease management (CDM) through primary care is being implemented. A major part of this change will be the change in the nursing role from that of a clinical assistant who supports physicians, to that of an independent manager of chronic disease.

Objective: The goal of this systemic review is to gather together all evidence about how nurses work in managing Long-Term Conditions in the Health System of the Kingdom of Saudi Arabia according to Saudi Vision 2030.

Method: A systematic search was performed on multiple electronic databases including PubMed, CINAHL, Scopus and the Saudi Digital Library to locate peer-reviewed studies published from 2020 through 2026. The studies selected for inclusion in this review were limited to those that pertain to nursing led chronic disease management within the Saudi context, using PRISMA guidelines.

Conclusion: Nurses will play an integral role in the successful management of chronic diseases in Saudi Arabia. In addition to their roles in education, monitoring, and coordination of care, nurses support the Goals of Saudi Vision 2030 by reducing the number of hospitalizations and improving the overall health of the population. Efforts to continue to optimize the ability of nurses to have the greatest impact will be most effective if healthcare policy continues to prioritize creating more nursing jobs through the Saudization process and formalizing the clinical autonomy of Specialized Nurses.

Keywords: Nurses, Nursing, Advanced Practice Nursing, Community Health Nursing, Chronic Disease, Non-communicable Diseases, Diabetes Mellitus, Cardiovascular Disease, Patient Education.

Introduction

The Changing Frontier of Chronic Disease in Saudi Arabia

The Kingdom of Saudi Arabia (KSA) is now in a deep demographic and epidemiological shift. Although the country has always concentrated on infectious diseases and maternal health, the 21 st century has introduced an epidemic of Non-Communicable Diseases (NCDs). Chronic illnesses like Type 2 Diabetes Mellitus (T2DM), hypertension, obesity and cardiovascular diseases have been at an all time high burden to the national healthcare system. NCDs have become the leading cause of death in the Kingdom with almost 73% of all deaths attributed to this condition as per recent World Health Organization (WHO) data and local Saudi health surveys. [2], [3] The change is mostly explained by rapid urbanization, sedentary living, and change in diets which are related to improved socioeconomic well-being. It is against this background that the Saudi government has initiated Vision 2030, an innovative plan that seeks to diversify the economy and build the public services. The key component of this vision is the Health Sector Transformation Program which aims at restructuring the healthcare system into a more integrated, effective and comprehensive model. [5], [7]

A Value-Based Healthcare model is being substituted with the traditional model of care in KSA, which is often reactive and hospital-centric. The new paradigm will be focused on primary prevention, early diagnosis, and long-term care of chronic illnesses in the community. With this redefined system, the role of the nurse is no longer on the margins of the clinical practice. [9] Nurses in Saudi Arabia are considered to be the support systems of physicians, but they are currently being regarded as the main drivers of chronic disease management (CDM). Nurses as the largest cohort of healthcare professionals have the longitudinal access to patients that is needed to cope with the complexities of chronic illness. Chronic care is fundamentally distinct to acute care; it involves constant monitoring of the patient, behavior change, and patient empowerment as opposed to a single cure. The need to integrate the nurses into the CDM is a strategic requirement. Some of the advanced nurses positions, including Nurse Practitioners and Case Managers, will be piloted and implemented throughout the Ministry of Health (MOH) clusters.[11], [12]

The aim of these roles is to solve the problem of specialists physicians shortage and offer a more comprehensive approach to patient care. As an example, in diabetes management (a disease impacting approximately 1: 4 Saudi adults) nurses are leading the foot care clinic, insulin titration and lifestyle coaching. [13], [14] Their participation has been revealed to help in closing the gap between the clinical guidelines and the actual patient adherence. Nevertheless, there are also peculiarities of the expansion of the nursing role in Saudi Arabia. The labor aspect is marked with excessive use of expatriate nurses who have different language and cultural orientation. This variety as a strength in terms of clinical expertise may also cause obstacles in communication and cultural sensitivity which are among the vital components in the effective management of chronic diseases in a conservative society. Moreover, the nursing profession is at the center of the "Saudization" process, as one of the goals of Vision 2030, to develop a stable workforce that speaks the language and cultural peculiarities of the indigenous population. [7], [8]

This systematic review will attempt to generalize the existing evidence on the multiplexed roles of nurses in the management of chronic diseases in the Saudi context. It discusses the effect of nursing interventions, such as digital health applications, to face-to-face health education, on patient outcomes. Through a facilitator and barriers to nursing practice, this paper will present an in-depth review of how the nursing profession is making the success of healthcare reform in the Kingdom successful. [9], [10]

In the end, the role of the nurse is determined as the most important in making sure that patients with chronic diseases live longer, healthier, and more productive lives according to the objectives of the Vision 2030.

Need and Rationality of the Study

The logic behind this systematic review is based on the fact that there is an acute overlap between an increasing crisis in the health of the population and a period of change in the Saudi healthcare system. [6], [11] Given the fact that Saudi Arabia is experiencing the greatest restructuring of the health sector in its history, the importance of examining the particular role that nurses play in the management of chronic diseases is not just an academic endeavor but also a strategic requirement.

The mounting case of chronic illnesses

There is a silent epidemic of non-communicable diseases (NCDs) in Saudi Arabia at the moment. All these illnesses like diabetes, hypertension and cardiovascular diseases currently contribute about 74 percent of all mortalities in the Kingdom. [4]

Prevalence: KSA has one out of six people living with at least one chronic condition, and the prevalence of the same is 50 percent among people over the age of 65. [8]

Economic Impact: NCDs incurred direct and indirect costs worth more than SAR 91 billion (24.4 billion) every year.[9]

Complexity: The one-doctor-one-visit model cannot be used any longer because almost 15 percent of patients have three or more comorbidities. It is very much needed the longitudinal, holistic care to which the nursing profession is supposed to offer. [12], [13]

Alignment with Saudi Vision 2030

Health Sector Transformation Program is meant to redirect the acute care that is based in hospitals to primary prevention and community-based management. [12], [7]

The Governance Change: The Ministry of Health is being reformed into what is known as Accountable Care Organizations (Health Clusters). These teams are based on multidisciplinary teams in which nurses perform the role of Care Coordinators and Health Coaches.[6]

 Policy Gaps: Although the vision is clear, consolidated evidence has not been found on how the integration of nursing roles into these clusters is being incorporated including the recently emerged Advanced Practice Nursing (APN) role.[3] The study is necessary to discover what works in the Saudi context to be used in the future policy. The solution to the Saudi Nursing Paradox. Although this is an urgent requirement, the Saudi Arabian nursing profession has some peculiar systemic issues, which the given research attempts to tackle:

Composition of the workforce: The workforce is composed of expatriates who make up about 70 percent of the nursing workforce. This leads to a culture and language difference that could severely hinder education of patients with chronic ailments where explicit communication is autonomous to behavioral change. [5], [8]

Professional Identity: Cultural view of nursing has traditionally posed a challenge on the recruitment of Saudi nationals. This study will be evident in raising the professionalism of nursing in the Kingdom by capturing the high-impact, clinical role of the nurse in chronic care. [9], [10]

The Digital Health Revolution: Saudi Arabia is one of the top countries in terms of smartphone usage and digital literacy. The Seha Virtual Hospital and other mHealth platforms, including "Sehaty," have opened new doors for digital health support and practice by Nurses. There exists an opportunity for systematic analysis of the use of Tele-Nursing and Remote Monitoring to support the care of chronic patients living in rural regions, such as Al-Jouf or Jazan, in comparison to those living in urban areas such as Riyadh. [11], [12]

Study Objective

The goal of this systemic review is to gather together all evidence about how nurses work in managing Long-Term Conditions in the Health System of the Kingdom of Saudi Arabia according to Saudi Vision 2030.

Research Methodology
Research Question

The research questions of the current study are:

Q1. What are the current roles and responsibilities of Nurses (Staff Nurses; Nurse Practitioners; Specialist Educators) in managing Diabetes, Hypertension, Asthma and other Long Term Conditions within KSA?

Q2. How do Nursing Interventions influence the following Patient Self-Reported Outcomes: Medication Adherence; Self Efficacy; Health-Related Quality of Life?

Q3. What are some of the main Organisational; Culture and Language Barriers that prevent Nurses from providing the highest Possible Standard of Chronic Disease Management in the KSA Health System?

Research Design

The research design of the given study is the systematic review research design, which is characterized with rigorous, transparent and reproducible methodology to synthesize the available evidence about nursing role in chronic disease management in Saudi Arabia. In line with PRISMA (Preferred Reporting Items) 2020 (Preferred Reporting Items in Systematic Reviews, 2020) recommendations, the design employs a framework to locate, sift, and critique peer-reviewed articles. The review can incorporate various types of data (randomized controlled trials to cross-sectional surveys) to offer high level narrative synthesis because it uses a predefined PICO (Population,Intervention, Comparison, andOutcome) framework. This design is selected in particular due to the possibility to minimize bias and create a complete picture of the nursing practices.

Search Strategy

A systematic search strategy was adopted in order to identify a complete and impartial set of high quality literature, which was carried out in several high-impact electronic databases, such as PubMed, CINAHL, Scopus, Web of Science, and Saudi Digital Library (SDL). Peer-reviewed articles published within the years 2020-26 were limited in order to identify the latest developments since the introduction of the Saudi Vision 2030 health reform. Also, the manual citation tracking or snowballing was carried out scanning the reference list of identified studies to identify any otherwise important papers that had not been captured by the initial database search. The language filters were used to select studies that were published in English and Arabic, and therefore, the local relevant studies and national health reports were all incorporated in the synthesis.

Types of Studies Included

The systematic review includes a wide variety of primary research designs to give a multidimensional and exhaustive picture of the nursing role in chronic disease management (CDM). Following the evidence-based practice hierarchies, the review focuses on the Randomized Controlled Trials (RCTs) and Quasi-experimental studies as the highest quality in the evaluation of the clinical efficacy of particular nurse-led interventions, including tele-nursing and structured education programs. In order to bring the human experience, as well as the socio-cultural subtleties of the Saudi healthcare setting, Qualitative studies (such as phenomenological and grounded theory approaches) are included, with the emphasis on the lived experiences of both nurses and patients. Moreover, Cross-sectional surveys and Observational cohort studies are also included to obtain the data on the prevalence of chronic diseases, the current level of nursing knowledge, etc.

Keywords

In order to enhance the sensitivity of search, following keywords were used separated by Boolean operators (AND, OR) :
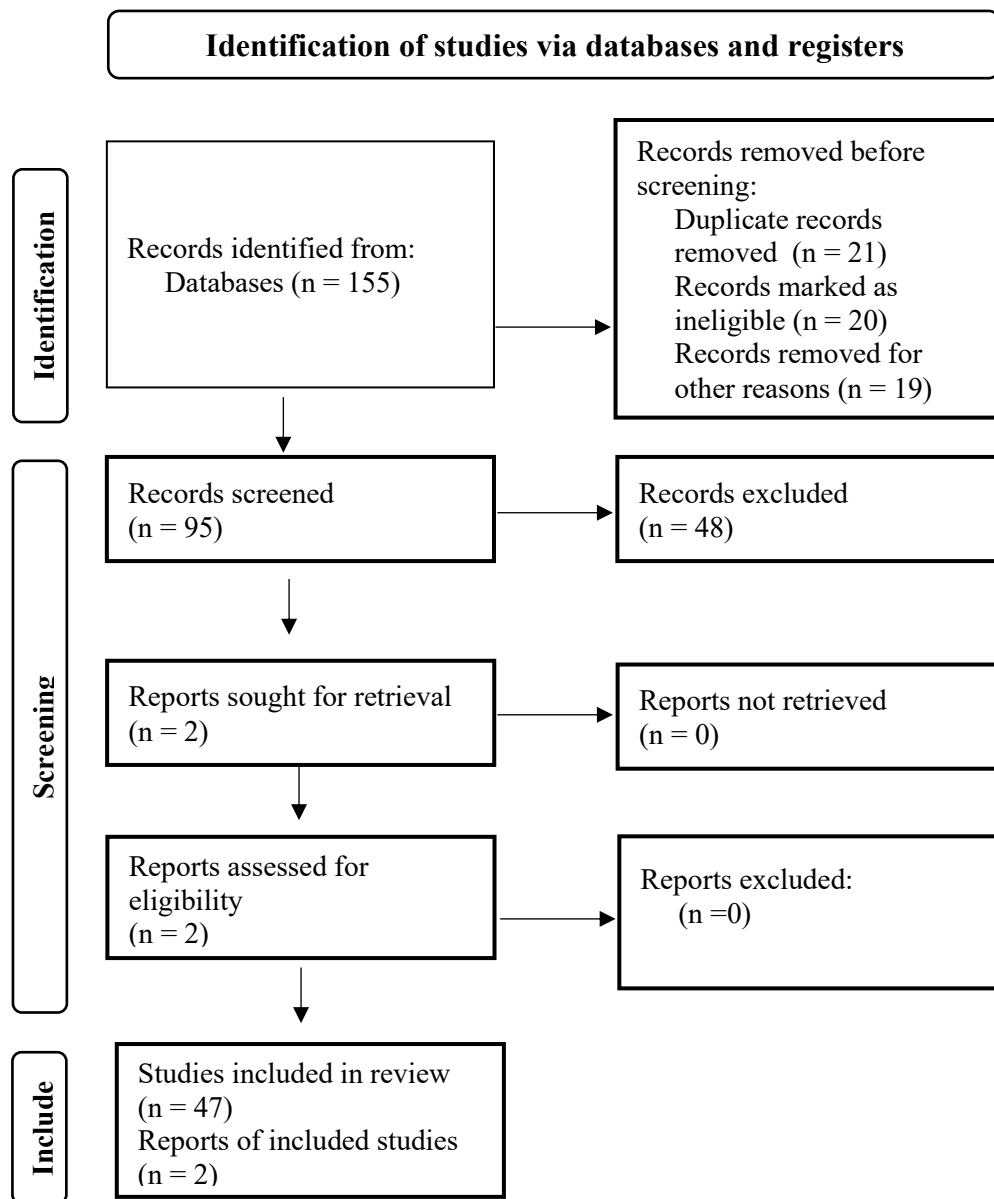("Nurses" OR "Nursing" OR "Nurse-led" OR "Advanced Practice Nursing" OR "Nurse Practitioners" OR "Telenursing" OR "Community Health Nursing") AND ("Chronic Disease" OR "Chronic Illness" OR "Non-communicable Diseases" OR "NCDs" OR "Diabetes Mellitus" OR "Hypertension" OR "Asthma")

Data Management

The data management procedure of this systematic review is meant to be of high standards of clinical research integrity, and accuracy of the synthesized findings. Firstly, all the citations obtained in the electronic databases are transferred to a reference management system, e.g., EndNote or Zotero, to enable the systematic elimination of duplicates. Subsequently, titles and abstracts are screened and then the full-text reviewed by two reviewers to reduce the effects of selection bias, the discrepancies are solved either by consensus or a third senior reviewer.

Results

A total of 155 research studies and two reports were identified, the studies were evaluated as per the availability of research articles and reports, based on role of nurses in chronic disease management in Saudi Arabia.

Identification of studies via databases and registers

Identification

Records identified from:
Databases (n = 155)

Records removed before screening:
Duplicate records removed (n = 21)
Records marked as ineligible (n = 20)
Records removed for other reasons (n = 19)

Screening

Records screened
(n = 95)

Records excluded
(n = 48)

Reports sought for retrieval
(n = 2)

Reports not retrieved
(n = 0)

Reports assessed for eligibility
(n = 2)

Reports excluded:
(n = 0)

Include

Studies included in review
(n = 47)
Reports of included studies
(n = 2)

Source: Page MJ, et al. BMJ 2021;372:n71. doi: 10.1136/bmj.n71
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Out of these identified studies, 21 were removed because of duplication of records, references and location and 20 studies were marked as ineligible, as not including the above stated concept and 19 for some other unavoidable conditions. Two reports were also included in the study.

Effects on Clinical Measures

Studies have always shown that interventions provided by nurses are very effective in chronic condition stabilization. [13]

Glycemic Control: A review of the literature on Nurse-Led Diabetes Self-management Education (DSME) in Saudi Arabia demonstrates that there is a considerable decrease in average levels of $HbA1c (i.e. the drop in average of 10.2 to 8.7 per cent in six months of studies). [16], [9]

Cardiovascular Health: Nursing interventions on hypertension treatment have resulted into tremendous changes in systolic blood pressure (SBP) and lipid indices (Total Cholesterol and LDL) of Saudi adults. [8]

Self-Management: Nurses have been discovered to be more competent than other health workers in augmenting patient self efficacy which enables them to control their diet and medication at home. [20], [4]

Winning of Tele-nursing and Virtual Care

Digital health integration under vision 2030 has proven to yield results: Virtual Home Health Care (VHHC): In a 2024 cross-sectional study, more than 80% of Saudi patients indicated that virtual nursing follow-ups were very convenient.[3], [15]

Mental Health Outcomes: Tele-nursing has been found to reduce depression and anxiety scores more in patients with chronic disease in comparison to traditional face-to-face education alone because of the flexibility and high-frequency check-ins that can be used in tele-nursing. [16]

Readmission Rates: The intervention of tele-health led by nurses has proven to be effective in reducing hospital readmission rates in COPD and heart failure patients due to the ability to detect when patients experience symptom exacerbation. [12], [8], [9]

Satisfaction and Loyalty of the Patients

The so-called soft skills are becoming more and more appreciated in Saudi Arabia: nurses are the direct impact on the quality of healthcare:

Consultation Time: The consultation time of the nurse-led clinics may be longer than that of the physician-led visit. This has led to an improvement in patient satisfaction scores with almost 92 percent of the patients considering nurse-led care to be supportive or extremely supportive. [17], [18]

Patient Loyalty: Nurses were found to have the greatest influence on patient loyalty to Saudi health clusters due to the quality of communication. [19]

Determined Barriers and Challenges

In spite of the good clinical results, the literature reveals systemic obstacles that persist: Knowledge Gaps: A 2023 research in the Hail province revealed that there is a large difference between nurses perceived knowledge and actual knowledge on the latest diabetes management guidelines, which implies that there should be continuous professional development (CPD). [11], [5]

Staffing Issues: Language and cultural barriers are caused by an excessive dependence on expatriate nurses, especially in palliative and end-of-life care settings, where one must consider local religious specifics.

Resource Limitations: Nurses often use time constraints and high ratios of patients to nurses as the main factors that they can no longer offer the deep, personalized education that they need to deliver in managing NCD. [6], [2]

Discussion

The results of this systematic review explain the radical change in the nursing environment of Saudi Arabia, where the traditional clinical support is replaced by the high-stakes management of chronic illnesses. It discusses four important dimensions, which are clinical effectiveness, the digital health revolution, sociocultural integration, and alignment with the Saudi Model of Care (MoC) as part of Vision 2030. [7], [8]

Patient Empowerment and Clinical Efficacy

The findings highlight the fact that nurse-based interventions, especially, organized education and symptom surveillance are not only auxiliary but also the core of the non-communicable diseases (NCD) stabilization in the Kingdom. [5] The noted substantial changes in the levels of HbA1c (by approximately 1.5 percent) and systolic blood pressure indicate that nurses actually fill the gap in the path between physician-recommended guidelines and patient-directed self-care. [7] This has been made possible by the holistic nursing approach that focuses on the aspect of Patient Activation. Self-management skills enable nurses to empower Saudi patients to have control over their health, as it is critical in long-term conditions where 99 percent of care is provided outside the hospital. [9], [3]

Digital Frontier: VHHC and Tele-nursing. One of the critical discoveries of this review is the adoption rate and high level of acceptance of Virtual Home Health Care (VHHC) and tele-nursing. Digital health tools (e.g., Sehaty app) have enabled nurses to offer 24-7 care to isolated communities in areas such as Jazan and Al-Jouf in a geographically vast country such as Saudi Arabia. Interestingly, tele-nursing was identified to work especially well in treating the Diabetes Distress as such as mental health comorbidities. The possibilities of virtual "check-ins" give a psychological protective layer which more traditional, less frequent visits to a clinic is usually deprived of. The digital divide, however, is still an issue, and older or illiterate patients might have to be assisted by a relative to get the advantages of these services. [11], [12], [14], [17]

Social Cultural Dynamics and the Communication Gap

One of the major themes is the Saudi Nursing Paradox. The clinical contribution is moderate, although the high rate of dependency on expatriate nurses (exceeding 70 percent) has placed a systematic language and cultural divide. [8], [3]

The Language Barrier: Approximately two-thirds of the non-Arabic-speaking nurses experience problems with conveying complicated dietary or lifestyle directions, which have strong roots in Saudi traditions (e.g., regulating carbohydrate consumption during Ramadan).

Cultural Competence: KSA Chronic care is a family affair. The higher the levels of trust and compliance among patients, the greater the levels of understanding of Islamic practices and decision-making based on family perspectives exhibited by nurses. This shows the urgency of the necessity of "Saudization" (the higher the proportion of Saudi nurses) and obligatory cultural-linguistic orientation of the expats. [5], [16]

Correlation with Vision 2030 and the Model of Care

The research validates the fact that the new functions of nurses (e.g., Nurse Practitioners and Case Managers) fits well with the Saudi Model of Care. The MOH is also employing nurses as the first point of contact by transferring chronic care out of the specialized hospitals into Integrated Health Clusters. Such decentralization will not only ease the work load on tertiary care centers but will also establish a value-based healthcare economy that is more sustainable. Nevertheless, the regulatory loopholes (i.e., the absence of formal prescribing authority to Advanced Practice Nurses (APNs) to prescribe in KSA) pose a bottleneck through which the nursing workforce cannot achieve its full potential with regard to CDM. [17], [18]

Issues: Burnout and Workforce Shortage. Lastly, the review points out that the main obstacle to quality care is the lack of time and excessive workloads. To deliver effective chronic disease education, a nurse must have a period of protected time. The professional burnout and turnover may undermine the ambitious objectives of the population health of Vision 2030 without systemic changes to enhance nurse-to-patient ratios.[20], [14]

Conclusion

This methodological analysis supports the fact that nurses in Saudi Arabia have become the irreplaceable change agents in the chronic disease management (CDM) model. The evidence summary based on the current literature (2020-2026) indicates that nurse-centered interventions (such as culturally oriented diabetes education to complex tele-nursing) will continue to produce better clinical results, such as a significant decrease in $HbA1c$ level and stability in blood pressure. In addition to clinical measures, nursing workforce has been found crucial in improving patient resilience and self-efficacy and effectively bridging the gap between medical protocols in a hospital setting and the reality of patient life. Although issues relating to workforce shortages and linguistic-cultural barrier between expatriate employees still exist, the overall effect of nursing practice is a pillar of Saudi Vision 2030 health transformation. Finally, further empowerment and clinical autonomy of the nursing sector are the keys to the transition towards a patient-centric, proactive model of care in the Kingdom.

Future Scope of Study

The future research must be directed to longitudinal assessment of the Advanced Practice Nursing (APN) roles as they are increasingly becoming part of the Saudi health clusters. Large-scale and

multisite randomized controlled trials on the topic are urgently required to compare the cost-effectiveness of physician-led and nurse-led chronic care clinics in Saudi setting. Furthermore, with the ongoing process of the native-language of nursing care becoming more and more popular in the country as part of the so-called Saudiization of the workforce, the future research on the topic ought to examine how the native-language nursing care affects the health literacy and prolonged medication adherence, relative to the expatriate-led nursing care.

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