THE EFFECTIVENESS OF NURSE-LED PROGRAMS FOR ENHANCING PATIENT ENGAGEMENT AND SELF-MANAGEMENT IN CHRONIC DISEASE CARE AT SAUDI ARABIA: SCOPING REVIEW

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Abstract

Introduction: Chronic diseases are a huge global health burden that require effective management techniques. Nurse-led programs have emerged as a viable way to improve patient involvement and self-management in chronic disease treatment.

Aim: This scoping review sought to map and synthesize available data on the efficacy of nurse-led interventions in improving these outcomes in Saudi Arabia.

Methods: To find relevant papers published between 2022 and 2024, a comprehensive search approach was used across electronic databases (PubMed, Scopus, CINAHL, Web of Science, and Saudi Digital Library). The inclusion criteria included studies that focused on nurse-led interventions for patients with chronic conditions in Saudi Arabia, with results linked to patient engagement, self-management, or clinical improvements. Exclusion criteria included studies conducted outside of the required timeframe, population, or without nurse-led treatments. A standardized form was used for data extraction and synthesis, as well as theme analysis.

Results: Five studies of which met the inclusion criteria. The data repeatedly show the effectiveness of nurse-led programs for a variety of chronic illnesses, including cardiovascular disease and diabetes. Nurse-led interventions were found to reduce cardiovascular-related hospital readmissions and emergency department visits, as well as improve blood pressure control and lipid profiles. In diabetes care, nurse-led patient education initiatives led to significantly increased medication adherence and better glycemic control. Several studies highlight nurses' vital role in providing individualized treatment, patient education, and emotional support, which leads to increased patient satisfaction, fewer hospital admissions, and a higher quality of life.

Conclusion: Nurse-led initiatives have significant potential to improve patient involvement, self-management, and health outcomes in chronic illness treatment in Saudi Arabia. These interventions present a practical and successful strategy for enhancing patient care. This analysis argues that nurse-led initiatives require targeted policy reforms, budget allocation, and health-care system improvements to support their implementation and extension.

keywords: nurse-led interventions, patient participation, self-management, chronic conditions.

Introduction

Chronic disease is the major cause of illness, disability, and mortality worldwide, as well as a significant driver of health-care consumption and spending (Davis et al., 2021). The global burden of chronic diseases, including diabetes, hypertension, and heart disease, has reached epidemic proportions, resulting in increased morbidity, death, and healthcare expense (Supriyanti et al., 2024). Nurse-led management of chronic disease is a watershed moment in healthcare delivery, stressing nurses' critical role in promoting patient-centered care and improving health outcomes (Alhazme et al., 2024).

Self-management therapies can effectively control symptoms, improve health outcomes, and encourage health promotion behaviors and decisions among persons living with chronic pain problems (Allegrante et al., 2019). Self-management is described as actions or techniques within the living environment that enhance health through five basic activities: problem-solving, decision-making, resource utilization, collaboration with health care providers, and taking action (Skolasky et al., 2024). Multimorbidity hinders the self-management of disease-causing drugs, thereby impacting compliance and treatment success (Singh et al., 2025).

Nurse-led interventions provide tailored, patient-centered treatment that is appropriate for chronic disorders (Zhang et al., 2024). Nurse-led interventions cover a wide range of disciplines, including patient education, lifestyle counseling, medication management, and care coordination, all with the goal of reducing complications and improving patient outcomes (Al Harth et al., 2022). In response to this difficulty, nurse-led interventions have emerged as a potential technique for increasing drug adherence (Al Makhalas et al., 2022). Nurses play an important role in patient care by providing a unique combination of professional competence, patient education, and emotional support. The data demonstrates that nurse-led treatments, such as individualized counseling, follow-up, and educational programs, can considerably improve adherence rates. For example, studies have observed improvements in medication adherence of up to 12-19% following nurse-led interventions (Al Makhalas et al., 2022). Nursing interventions are essential in managing chronic illnesses because they address both the physical and psychosocial elements of care. Nurses educate patients to self-manage their diseases, which is critical for long-term care and limiting disease progression (Alruwaili et al., 2024).

The Kingdom of Saudi Arabia (KSA) is integrating nurse-led initiatives and technological advancements to improve care quality results (Alfaqih et al., 2023). This strategic approach aims to improve patient experiences, clinical outcomes, and healthcare delivery systems in order to give the best possible care to all patients across the kingdom (Alfaqih et al., 2023). There is a void in current research on the effectiveness of nurse-led initiatives for increasing patient participation and self-management in chronic disease treatment in Saudi Arabia. While nurse-led interventions have been found to improve patient outcomes and self-management in chronic disease care around the world, there is minimal information on the topic in Saudi Arabia. The primary purpose of this scoping review is to identify, map, and synthesize the existing literature on the effectiveness of nurse-led programs for enhancing patient engagement and self-management in chronic disease care at Saudi Arabia.

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Methods

Introduction

This scoping review used a systematic strategy to find, map, and synthesize available research on the efficacy of nurse-led initiatives to improve patient involvement and self-management in chronic disease care in Saudi Arabia. The methodology followed the frameworks proposed by Arksey and O'Malley (2005) and Levac et al. (2010) for conducting scoping reviews. This ensured a rigorous and thorough examination of the current evidence base, allowing for the identification of key concepts, gaps in the literature, and prospective topics for future study on this critical topic.

Search Strategy

To find relevant papers, a comprehensive search technique was used across multiple electronic resources. The databases searched included, but were not limited to: PubMed, Scopus, CINAHL, Web of Science, and the Saudi Digital Library. The search strategy was methodically planned, using a combination of keywords and limited vocabulary terms to catch all pertinent data. This included phrases like nurse-led interventions, patient participation, self-management, chronic conditions, and the geographical context of Saudi Arabia. Boolean operators (AND, OR, NOT) were used to optimize the search, and a library or information specialist was consulted to guarantee the search method was thorough and accurate. Grey literature sources, such as government papers and organizational websites, were also investigated to find any additional relevant information that would not have been available in standard academic databases.

Inclusion Criteria:

Specific inclusion criteria were used to guarantee that the included studies were relevant and high-quality from (2022-2024). All study designs, including randomized controlled trials, quasi-experimental studies, cohort studies, cross-sectional studies, qualitative studies, and systematic reviews, were evaluated. The study population included patients with one or more chronic diseases getting care in Saudi Arabia. The intervention was a nurse-led program or intervention that aimed to improve patient participation or self-management of chronic disease. Furthermore, research reported on outcomes associated with either patient involvement (e.g., patient satisfaction, participation in care choices) or self-management (e.g., medication adherence, lifestyle adjustment, symptom control, health-related quality of life). Studies were also carried out in healthcare settings important to chronic disease care (e.g., hospitals, primary care clinics, outpatient clinics, and community health centers). Finally, only papers published in English.

Exclusion criteria

Specific exclusion criteria were used to remove studies that did not meet the review's objectives. We omitted studies that did not focus on people with chronic illnesses. Interventions that were not primarily directed or managed by nurses were also omitted. Studies conducted outside of Saudi Arabia were not considered. Furthermore, if translation was not possible, papers published in languages other than English or Arabic were omitted. Opinion articles, editorials, and conference abstracts with insufficient data were eliminated. Finally, studies with unclear methodology or data presentation were removed to verify that the findings were valid and reliable.

Study Selection Process

In 2024, the review search produced 80 results. After removing the duplicates, 50 studies remained.

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After assessing the titles and abstracts, 30 studies were excluded because they did not match the inclusion criteria. Thus, 20 studies were thoroughly reviewed for eligibility; five studies were removed because they did not describe the original experiments.

Data Extraction

A standardized data graphing form was created and used to retrieve relevant information from the included research. This form was comprehensive, encompassing key data elements such as study characteristics (such as: author, year of publication, study design, sample size, setting), patient population characteristics (e.g., age, gender, chronic diseases), intervention characteristics (e.g., type of nurse-led intervention, content, duration, delivery method, personnel involved), outcomes measured (e.g., patient engagement, self-management behaviors, clinical outcomes), and key findings.

Data Analysis and Synthesis

The gathered data was thoroughly evaluated and synthesized to meet the scoping review's objectives. A descriptive overview was provided, summarizing the features of each included trial, as well as specific information about the therapies, patient demographics, and reported outcomes. A thematic analysis was used to discover and categorize common themes and patterns regarding the efficacy of nurse-led initiatives. The findings were presented in a narrative fashion, with tables and figures to help map the current evidence, identify gaps in the literature, and suggest specific areas for future research. The findings were carefully evaluated within the context of Saudi Arabia's healthcare system, taking into account the distinct cultural, social, and economic elements that may have influenced the adoption and success of nurse-led treatments.

Results

According to one analysis examined the effect of nurse-led clinics on patient mortality and morbidity in cardiovascular disease by combining evidence from recent interventional studies and clinical trials. A systematic search of PubMed, Embase, CINAHL, Cochrane Library, and Web of Science was performed for studies published within the last five years up to 2022, with inclusion criteria focusing on interventional studies such as randomized controlled trials (RCTs), quasi-experimental studies, and cohort studies with control groups that focused on the effect of nurse-led clinics on CVD outcomes. Observational studies, studies not written in English, and studies with no meaningful outcomes were all excluded. Data extraction and methodological quality assessment were carried out with standardized tools. Eight studies met the inclusion requirements, with sample sizes ranging from 50 to more than 1,000 participants. Nurse-led interventions resulted in a 20% reduction in cardiovascular-related hospital readmissions (RR 0.80; 95% CI 0.65 to 0.98) and a 25% drop in emergency department visits (RR 0.75; 95% CI 0.59 to 0.94). There were also improvements in systolic blood pressure control (15% improvement; RR 1.15; 95% CI 1.05 to 1.26), as well as reductions in LDL cholesterol levels (average decrease of 18 mg/dL; 95% CI 10 to 26 mg/dL). The findings showed that nurse-led clinics significantly improve cardiovascular disease management, as evidenced by lower hospital readmission and emergency department visit rates, as well as improvements in blood pressure and cholesterol levels, advocating for their integration into healthcare systems to improve the quality of care for CVD patients (Alajmi et al., 2022).

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Regarding to one study, chronic diseases place a significant burden on global healthcare systems, needing ongoing management and care to reduce complications and improve patient quality of life. Nurse-led interventions have been shown to improve chronic illness management by helping patients adhere to treatment plans, make positive lifestyle changes, and achieve better overall health outcomes. Recent research has highlighted the effectiveness of these treatments, finding significant improvements in a variety of chronic illness outcomes, emphasizing the crucial role of nurse-led programs in tackling the difficulties of chronic disease management (Almotairy et al., 2022).

According to one cross-sectional study, diabetes is a chronic condition that requires continuing management, and patient education is an important part of diabetes care. A total of 500 type 2 diabetes patients from diabetes clinics in Riyadh, Saudi Arabia, were recruited and separated into two groups: those getting a nurse-led patient education programme and those receiving routine care. The study found that participants in the nurse-led program had significantly higher medication adherence scores, as measured by the Morisky Medication Adherence Scale (MMAS-8), and better glycemic control, as measured by glycated hemoglobin (HbA1c) levels, than those who received standard care alone. The study's findings highlight the importance of patient education in diabetes treatment and the ability of nurse-led initiatives to improve patient outcomes in Saudi Arabia (Almutairi et al., 2022).

One study shows that, in terms of the changing landscape of healthcare, the rising frequency of chronic diseases poses enormous difficulties to global healthcare systems, which are exacerbated by growing populations and concurrent infectious disease burdens. Chronic disease treatment necessitates long-term care and ongoing monitoring, placing significant demands on healthcare personnel. Nurses and nursing technicians play critical roles in chronic illness management, providing tailored care that includes patient education, comprehensive assessment, medication adherence support, and psychological aid. These nursing experts also improve care coordination among multidisciplinary teams, resulting in better health outcomes. This review emphasizes the importance of nurses in chronic disease treatment, specifically in patient education, monitoring, emotional support, and overall healthcare delivery. By addressing patients' diverse needs, nurses help to improve patient adherence, reduce hospital admissions, and improve overall care quality (Almoteri et al., 2024).

According to one study, the rising global prevalence of diabetes mellitus, particularly Type 2 diabetes, needs new care models and methods for its management. A thorough evaluation of the existing research emphasizes the critical role of nurses, particularly Diabetes Inpatient Specialist Nurses, in improving diabetes care through teaching and support. The study's objectives, which focus on the impact of nurse-led educational interventions on patient knowledge, self-management behaviors, and clinical outcomes such as glycosylated hemoglobin (HbA1C) levels, highlight the importance of nurse-led Diabetes Self-Management Education and Support (DSME). The findings highlight the effectiveness of DSME in promoting improved patient satisfaction, fewer hospital admissions, and shorter hospital stays, while also emphasizing the need for systemic changes in policies, education, and professional recognition to better integrate and expand nurses' roles in diabetes management. Finally, empowering nursing personnel is viewed as critical for optimizing diabetes care delivery and increasing patient outcomes in the face of this expanding global health concern (Alruily et al., 2024).

Discussion

This scoping analysis highlights nurse-led programs' revolutionary potential in promoting patient

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involvement and self-management in chronic disease care, notably in Saudi Arabia. The combination of many studies reveals a consistent pattern: nurses play a critical role in promoting patient-centered care and delivering considerable improvements in health outcomes across a variety of chronic illnesses. These findings clearly support the integration and extension of nurse-led initiatives in the Saudi healthcare system, pushing for budget allocation and legislative changes to support these tactics.

One critical area of influence is the large effect of nurse-led clinics on the management of cardiovascular illnesses (CVD). Alajmi et al. (2022) did a meta-analysis of interventional trials and discovered a 20% reduction in cardiovascular-related hospital readmissions (RR 0.80; 95% CI 0.65 to 0.98) and a 25% reduction in emergency department visits (RR 0.75; 95% CI 0.59 to 0.94) after nurse-led interventions. These programs also resulted in a 15% improvement in systolic blood pressure control (RR 1.15; 95% CI 1.05 to 1.26) and an average LDL cholesterol reduction of 18 mg/dL (95% CI 10 to 26 mg/dL). These convincing findings, which demonstrate significant improvements in key health markers, highlight the importance of nurse-led clinics in CVD management and encourage their inclusion into existing healthcare models.

To emphasize this point, Almotairy et al. (2022) found that nurse-led interventions significantly improve the management of several chronic conditions. These interventions help patients stick to treatment plans, empower them to make good lifestyle changes, and lead to better overall health outcomes. The significance of this strategy is shown in studies such as Almutairi et al. (2022), which focus on diabetes care. In this study, a nurse-led patient education program resulted in significantly higher medication adherence scores, as judged by the Morisky Medication Adherence Scale (MMAS-8), and better glycemic control, as evidenced by lower HbA1c values, when compared to patients getting regular care. These findings emphasize the importance of patient education in diabetes management and demonstrate the efficacy of nurse-led initiatives in improving patient outcomes in Saudi Arabia.

Almoteri et al. (2024) expand on the function of nurses, stating that nurses and nursing technicians play critical roles in chronic illness management by providing individualized patient care such as patient education, complete assessment, medication adherence support, and emotional support. These nurse-led programs also increase care coordination across diverse teams, leading to better patient outcomes. This comprehensive strategy addresses patients' different requirements, resulting in improved adherence, fewer hospital admissions, and higher overall quality of care.

Alruily et al. (2024) investigated the impact of Diabetes Self-Management Education and Support (DSME) delivered by expert nurses. The findings demonstrate the usefulness of DSME in improving patient satisfaction, reducing hospital admissions, and shortening hospital stays. The study also emphasizes the importance of policy changes that better integrate and broaden nurses' roles in diabetes management, allowing them to optimize treatment and enhance patient outcomes.

Aside from these important themes, the study offers additional evidence demonstrating the importance of nurse-led methods in improving outcomes across multiple chronic illnesses and using a variety of techniques. Zhang et al. (2024) examined nurse-led electronic health interventions, emphasizing the use of smartphones, the Internet, and specialized electronic monitoring equipment for self-management coaching, health information tracking, and peer support. A meta-analysis found that electronic health interventions dramatically raised self-care and improved quality of life while decreasing depression, anxiety, and rehospitalization rates.

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Qiu et al. (2024) investigated the influence of self-care interventions on health-related quality of life in older people with chronic conditions, adding to the variety of nurse-led treatments. This evaluation emphasized the use of a range of approaches, with a particular emphasis on health-related quality of life, symptom burden, physical function, and cost effectiveness.

Supriyanti et al. (2024) investigated the effectiveness of nurse-led interventions in promoting medication adherence among patients with chronic illnesses, discovering that a variety of methods, including counseling, telehealth, instructional sessions, and digital reminders, resulted in significant improvements, with adherence rates increasing by 15% to 25%. This review adds to the evidence supporting the effectiveness of nurse-led interventions in improving patient adherence across a wide range of groups.

The information presented implies that specific policy adjustments are required within the Kingdom of Saudi Arabia's healthcare system. The allocation of resources for nurse training, teaching, and the construction of nurse-led clinics is critical. Furthermore, the integration of technological solutions such as telemedicine platforms, mobile applications, and electronic health records should be prioritized. Furthermore, the findings emphasize the value of interprofessional teamwork.

Conclusion

This scoping analysis thoroughly investigated the influence of nurse-led programs on patient participation, self-management, and outcomes in Saudi Arabia, with an emphasis on chronic disease treatment. The review of existing literature emphasizes nurse-led interventions' transformative potential for improving patient-centered care and health outcomes.

Key findings highlight the efficacy of nurse-led programs in controlling a variety of chronic illnesses, including cardiovascular disease, diabetes, and more. These programs routinely show significant gains in patient engagement, medication adherence, and health outcomes, emphasizing nurses' vital role in encouraging good lifestyle changes and empowering patients to manage their health efficiently. The assessment emphasizes the vital importance of policy changes, financial allocation, and healthcare system adjustments to promote the growth and extension of nurse-led programs in Saudi Arabia. The incorporation of technology, such as telehealth platforms and mobile applications, is also critical for improving patient access to treatment and increasing the efficiency of nursing interventions.

Future Directions

Future study should look into how nurse-led programs affect certain patient demographics, such as underserved or hard-to-reach neighborhoods, as well as the long-term viability of these interventions. Furthermore, the importance of nurse-led initiatives in reducing hospital readmissions, increasing health literacy, and addressing health inequities should be prioritized for future research.

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