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The effectiveness of nurse-led interventions on chronic disease management

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Abstract

Chronic diseases such as Chronic Obstructive Pulmonary Disease (COPD), Diabetes Mellitus, and Chronic Heart Failure (CHF) impose significant burdens on global healthcare systems and affect millions of individuals worldwide. Nurse-led interventions have emerged as a pivotal strategy in the management of these conditions, offering a comprehensive approach that encompasses patient education, lifestyle modification, medication management, and psychosocial support. This review synthesizes current evidence on the effectiveness of nurse-led interventions in chronic disease management, highlighting their impact on improving patient outcomes, enhancing self-management capabilities, reducing hospital readmissions, and improving quality of life. Drawing on a variety of studies, this paper aims to provide a cohesive understanding of how nurse-led interventions contribute to better management of chronic diseases and outline the implications for practice, policy, and future research.

Keywords: Diabetes mellitus, encompasses, improving

Introduction

The burden of chronic diseases on individuals and healthcare systems worldwide is profound and growing. Conditions such as COPD, Diabetes Mellitus, and CHF not only lead to significant morbidity and mortality but also place a heavy demand on healthcare resources. The complexity of managing these diseases requires innovative approaches that go beyond traditional medical treatment, encompassing patient education, lifestyle changes, and psychosocial support to ensure comprehensive care. Nurse-led interventions have gained recognition for their role in addressing this need, offering personalized, patient-centered care that aligns with the chronic nature of these conditions.

Nurse-led interventions are defined as healthcare initiatives led or significantly carried out by nursing professionals. These interventions are multifaceted, often involving patient education on disease management, support for behavioral and lifestyle changes, medication management, and the provision of emotional and psychosocial support. The unique position of nurses, who often spend considerable time in direct contact with patients, enables them to build trusting relationships, identify individual needs, and deliver tailored interventions that address the specific challenges faced by people with chronic diseases.

Main objective

The main objective of this review is to evaluate the effectiveness of nurse-led interventions in the management of chronic diseases, specifically COPD, Diabetes Mellitus, and CHF. It aims to assess how these interventions impact patient outcomes, including self-management practices, quality of life, hospital readmission rates, and overall disease control.

Chronic Obstructive Pulmonary Disease (COPD)

Chronic Obstructive Pulmonary Disease (COPD) is a progressive respiratory condition characterized by airflow limitation that is not fully reversible. It is associated with an enhanced chronic inflammatory response in the airways and lungs to harmful particles or gases. COPD is a leading cause of morbidity and mortality worldwide and poses significant challenges to healthcare systems due to its chronic nature and the extensive care required for management. Nurse-led interventions have emerged as a key component in managing COPD, providing comprehensive care that encompasses education, self-management, and

emotional support. This narrative review examines the role of nurse-led interventions in COPD management, highlighting their impact based on previous studies and analyses.

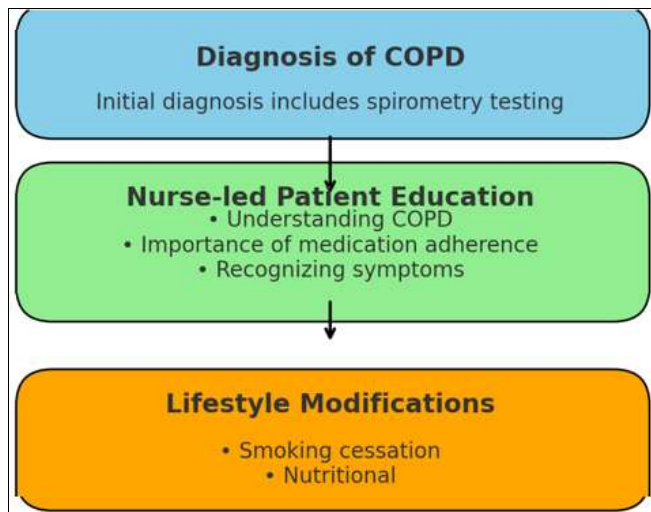


Fig 1: Management of Chronic Obstructive Pulmonary Disease (COPD) through nurse-led interventions

Diagnosis of COPD

The process begins with diagnosing COPD, primarily using spirometry testing. Spirometry is crucial for measuring the volume and flow of air that can be inhaled and exhaled, which is essential for confirming the presence of COPD. This step may also involve assessing the patient's medical history and symptoms to ensure an accurate diagnosis and to understand the severity of the condition.

Nurse-led Patient Education

After diagnosis, a crucial intervention is educating the patient about COPD. This education covers three main areas:

Understanding COPD: Patients are informed about the nature of their condition, its progression, and the overall impact it may have on their lives. This knowledge is vital for patient engagement and management of their condition.

Importance of Medication Adherence: Educating patients on the correct use of medication, the importance of sticking to their prescribed medication schedules, and how different medications work. This information helps prevent exacerbations and controls symptoms.

Recognizing Symptoms: Patients learn to identify signs of exacerbations or worsening conditions early. This knowledge can lead to prompt management and can potentially reduce hospital visits.

Lifestyle Modifications: Lifestyle changes are recommended to support the management of COPD. This part of the process includes:

Smoking Cessation: Given that smoking is a leading cause of COPD, quitting smoking is possibly the most effective way to halt the progression of the disease. Nurses play a key role in supporting patients through this challenging process.

Nutritional: Proper nutrition can help manage COPD symptoms and improve overall health. Nurses may provide dietary recommendations or refer patients to a nutritionist for specialized advice.

Nurse-led Interventions for COPD Management

Nurse-led interventions in COPD management typically involve a range of activities, including patient education, self-management strategies, medication adherence, lifestyle modifications, and psychosocial support. These interventions aim to improve patients' quality of life, enhance their ability to manage symptoms, reduce hospital readmissions, and ultimately, improve clinical outcomes.

A systematic review and meta-analysis by Aranburu-Imatz *et al.* (2022) identified that nurse-led interventions in COPD patients significantly improve quality of life, emotional state, and pulmonary and physical capacity. These interventions, which often include education on disease management and lifestyle advice, empower patients to take an active role in managing their condition, leading to improved health outcomes^[1].

Lee *et al.* (2015) conducted a randomized controlled trial examining the effects of nurse-led problem-solving therapy (PST) on patients with COPD. While no significant differences were observed in coping, self-efficacy, and depressive symptoms between the intervention and control groups overall, a subgroup of clinically depressed patients with COPD showed significant improvements in depressive symptoms and self-efficacy. This suggests that targeted nurse-led interventions can effectively address specific needs of COPD patients, potentially reducing the need for acute care services^[2].

Nurse-led interventions also focus on enhancing patients' coping strategies and psychological well-being. Chronic diseases like COPD can have a profound impact on mental health, with patients often experiencing anxiety and depression. Tailored interventions, including counseling and support groups led by nurses, have been shown to alleviate these psychological burdens, thus improving overall disease management. Educational programs on smoking cessation, nutritional advice, and physical activity are crucial components of COPD management. Nurses play a vital role in delivering these programs, providing patients with the knowledge and skills needed to modify their lifestyle and manage their symptoms effectively.

Diabetes Mellitus

Nurse-led interventions play a pivotal role in the management and care of patients with Diabetes Mellitus (DM), significantly influencing outcomes through patient education, support for self-management, lifestyle modification assistance, and monitoring of glycemic control. These interventions are crucial for both Type 1 and Type 2 Diabetes, as they help in managing the condition effectively, preventing complications, and enhancing the quality of life for patients. This detailed exploration focuses on the multifaceted role of nurse-led interventions in diabetes care, supported by evidence from various studies.

Patient Education and Self-management Support

One of the primary roles of nurses in diabetes care is providing patient education, which is fundamental in enabling patients to manage their condition actively. Education covers a broad spectrum of care aspects,

including the importance of glycemic control, dietary recommendations, physical activity, medication adherence, and recognition of hypo- and hyperglycemia symptoms. Nurses utilize individual and group sessions, digital platforms, and written materials to enhance patient knowledge and skills, aiming for informed decision-making and active participation in their care. Studies have shown that nurse-led education programs significantly improve patients' knowledge about diabetes, leading to better self-management practices. For instance, nurse-led interventions have been associated with improved blood glucose monitoring, dietary management, and physical activity levels among patients, ultimately contributing to better glycemic control.

Lifestyle Modifications and Behavioral Interventions

Nurses play a key role in supporting lifestyle modifications, which are crucial in managing diabetes effectively. Interventions focusing on dietary changes, physical activity, weight management, and smoking cessation are delivered through counseling and motivational interviewing. Nurses work closely with patients to set realistic goals, develop action plans, and provide ongoing support to sustain behavioral changes.

Research indicates that nurse-led lifestyle interventions can lead to significant improvements in body weight, lipid profiles, and glycemic control, reducing the risk of diabetes-related complications. Additionally, these interventions promote a sense of empowerment among patients, encouraging them to take charge of their health.

Medication Management and Insulin Therapy

Nurse-led interventions are essential in medication management, particularly for patients on insulin therapy. Nurses provide training on insulin administration techniques, dosage adjustments, and monitoring for side effects. They also offer guidance on the proper use of blood glucose monitoring devices, interpretation of results, and timely adjustments in therapy based on glycemic readings. A study on nurse-led insulin initiation and titration programs demonstrated significant improvements in HbA1c levels among patients with poorly controlled Type 2 Diabetes, underscoring the effectiveness of such interventions in enhancing glycemic control.

Monitoring and Management of Complications

Nurses are involved in the routine monitoring of patients for diabetes-related complications, including cardiovascular diseases, nephropathy, neuropathy, and retinopathy. They perform or coordinate necessary screenings and assessments, facilitate referrals to specialists, and provide care for comorbid conditions. Early identification and management of complications are critical to preventing progression and maintaining patient well-being.

Psychosocial Support

The psychological impact of living with diabetes cannot be understated. Nurses provide psychosocial support, addressing issues such as diabetes distress, depression, and anxiety, which are common among patients with chronic conditions. Support groups, counseling sessions, and referral to mental health services are part of the comprehensive care approach led by nurses.

Chronic Heart Failure

The management of chronic heart failure (CHF) presents significant challenges due to its complex clinical manifestations and the extensive, multifaceted care required. Nurse-led interventions have emerged as a pivotal component in the care and management of CHF patients, offering a comprehensive approach that encompasses patient education, lifestyle modification guidance, medication management, and psychosocial support. This detailed discussion explores the role of nurse-led interventions in CHF management;

Patient Education and Self-management

A cornerstone of nurse-led interventions in CHF management is patient education and support for self-management. Nurses provide patients with detailed information about their condition, the importance of monitoring symptoms, dietary and fluid intake recommendations, and the necessity of adhering to medication regimens. Education also covers the recognition of early signs of exacerbation, which is crucial for preventing hospital admissions.

Evidence suggests that nurse-led education significantly improves patients' knowledge and self-management abilities, leading to better health outcomes. Patients who receive comprehensive education from nurses report feeling more empowered and are more likely to engage in proactive health behaviors.

Lifestyle Modification and Behavioral Interventions

Nurses play a key role in supporting patients with CHF in making necessary lifestyle modifications. This includes dietary advice to limit fluid and salt intake, encouraging physical activity within individual capacity, and offering smoking cessation support. Nurses tailor these interventions to each patient's specific needs, taking into account their physical limitations and comorbid conditions. Studies have shown that nurse-led lifestyle interventions can lead to improvements in exercise tolerance, weight management, and overall quality of life for CHF patients. These interventions are often delivered through face-to-face counseling, telehealth sessions, and support groups, providing ongoing motivation and reinforcement.

Medication Management

Effective medication management is critical in CHF to optimize therapy, manage symptoms, and prevent exacerbations. Nurses are involved in educating patients about their medications, ensuring understanding of the purpose, dosing, and potential side effects. They also monitor patients' adherence to medication regimens and collaborate with physicians to adjust treatments as necessary based on patient response and symptom changes. Randomized controlled trials have highlighted the effectiveness of nurse-led medication management programs in improving adherence rates and optimizing medication regimens, contributing to enhanced patient outcomes and reduced hospitalization rates.

Monitoring and Follow-up

Nurse-led interventions often include regular monitoring and follow-up to assess symptom progression, evaluate treatment effectiveness, and identify early signs of deterioration. This proactive approach allows for timely

adjustments in care plans and interventions, potentially averting hospital admissions and complications.

Remote monitoring technologies, including telehealth and wearable devices, have become integral tools in nurse-led monitoring efforts, enabling continuous assessment of vital signs, symptoms, and physical activity levels in real-time.

Psychosocial Support

Living with CHF can have a profound impact on patients' psychological well-being. Nurses provide essential psychosocial support, addressing issues such as anxiety, depression, and social isolation, which are prevalent among CHF patients. This support includes counseling, facilitating access to mental health services, and connecting patients with community resources and support networks.

Conclusion

The effectiveness of nurse-led interventions in the management of chronic diseases, including Chronic Obstructive Pulmonary Disease (COPD), Diabetes Mellitus, and Chronic Heart Failure (CHF), has been extensively documented through research and clinical practice. These interventions, characterized by comprehensive patient education, support for self-management, lifestyle modification guidance, medication management, and psychosocial support, have demonstrated a significant impact on improving patient outcomes across various chronic conditions.

Nurse-led interventions bridge the gap between clinical care and everyday life for patients with chronic diseases. By providing tailored education, nurses empower patients with the knowledge to manage their conditions effectively. Support for self-management and lifestyle modifications addresses the behavioral aspects of disease management, encouraging patients to take active roles in their care. Medication management by nurses ensures adherence to treatment plans, optimizing therapeutic outcomes. Furthermore, the psychosocial support offered by nurses addresses the mental and emotional challenges faced by patients, enhancing their overall well-being and quality of life.

Evidence from studies highlights the positive outcomes associated with nurse-led interventions, including improved glycemic control in Diabetes Mellitus, enhanced quality of life and reduced hospital readmissions in CHF, and better symptom management in COPD. These interventions have also been linked to increased patient satisfaction, indicating a favorable response from patients who receive comprehensive care from nurses.

The integration of nurse-led interventions into chronic disease management strategies signifies a shift towards more patient-centered, holistic care models. This approach not only improves clinical outcomes but also promotes patient empowerment, self-efficacy, and engagement in health management. The success of nurse-led interventions underscores the need for continued support, training, and resources for nursing professionals, ensuring that they can continue to deliver high-quality care to patients with chronic diseases.

In conclusion, nurse-led interventions are a vital component of chronic disease management, offering a multifaceted approach that significantly enhances patient care and outcomes. The evidence supports the expansion of nurse-led programs in healthcare settings, recognizing the critical role

that nurses play in the continuum of care for patients with chronic conditions.

Conflict of Interest

Not available

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References

1. Aranburu-Imatz A, *et al.* Nurse-Led Interventions in Chronic Obstructive Pulmonary Disease Patients: A Systematic Review and Meta-Analysis. *Int. J Environ Res. Public Health*, 2022, 19. Available from:
2. Lee H, *et al.* The effect of nurse-led problem-solving therapy on coping, self-efficacy and depressive symptoms for patients with chronic obstructive pulmonary disease: A randomised controlled trial. *Age Ageing*. 2015;44(3):397-403. Available from:
3. Subramanian S, Porkodi A, Akila P. Effectiveness of nurse-led intervention on self-management, self-efficacy and blood glucose level among patients with Type 2 diabetes mellitus. *J Complement Integr. Med.*, 2020, 17. Available from:
4. Chen C, *et al.* The Efficacy of a Nurse-Led Disease Management Program in Improving the Quality of Life for Patients with Chronic Kidney Disease: A Meta-Analysis. *PLoS ONE*, 2016, 11. Available from:
5. Thompson D, Quinn T, Stewart S. Effective nurse-led interventions in heart disease. *Int. J Cardiol*. 2002;83(3):233-7. Available from:
6. Hegney DG, Patterson E, Eley D, Mahomed R, Young J. The feasibility, acceptability and sustainability of nurse-led chronic disease management in Australian general practice: the perspectives of key stakeholders. *Int. J Nurs. Pract.* 2013;19(1):54-9. Available from:

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