

The Role of Nurses in Managing Chronic Diseases: Strategies for Improved Patient Outcomes in Saudi Arabia.

Sahar Theyab Humoud Al Kabi¹: Maha Mohammad Abdullah Asiri²: Norah Ali Asiri³: Norah Hasan Asiri Asiri⁴: Jumah Mohammed Ali AlHwais⁵: Aisha Hussain Fehaid Alfarwan⁶: Jawahir Hassan Mohammed Assery⁷: Aidah Seead Alasmri⁸:

1Nursing, Mahalh Primary health care, Abha
2Nursing, Abha Health Sector, Abha
3Nursing, Mahalh Primary health care, Abha
4Nursing, Alazizyah Primary health care, Abha
5Nursing, AlAzezyah PHCC, Abha
6Nursing, ALzezyah PHCC, Abha
7Nursing, Mahayil health sector, Abha
8Nursing, Alazizyah Primary health care, Abha

Abstract:

Chronic diseases, such as diabetes, heart disease, and hypertension, pose significant challenges to healthcare systems worldwide. Nurses, as frontline healthcare providers, play a critical role in managing these conditions through continuous care, patient education, and interprofessional collaboration. In this review, we explore how nurses play an active role in chronic disease management, focusing on developing comprehensive care plans, continuous patient monitoring, and integrating digital technologies to enhance care delivery. The importance of communication, teamwork, and critical thinking in nursing practice is also discussed, along with the role of modern healthcare models in improving outcomes for patients with chronic diseases, particularly in Saudi Arabia. By emphasizing the multifaceted role of nurses, this review aims to underscore their pivotal contributions to improving the quality of life for patients with chronic diseases.

Keywords:Chronic disease, Nursing care, Healthcare technologies, Patient outcomes, Saudi Arabia.

Introduction

In healthcare systems, nurses are the first line of defense and play a key role in patient care and improving health outcomes, especially for patients with chronic diseases [1,2].Nurses are leaders in their field, possessing the skills needed to enhance healthcare and improve patient outcomes [3]. The growing population, prevalence of chronic diseases, and increased risk of injury have led to an increased need for specialized nursing services that include assessment, diagnosis, planning, implementation, and evaluation to ensure comprehensive and effective patient care [4,5].

Managing chronic diseases in healthcare settings requires nurses to have a deep understanding of the diverse and complex challenges of chronic diseases [6]. Nurses encounter a diverse group of patients with a variety of chronic diseases such as diabetes, hypertension, heart disease, and respiratory diseases. Some patients may have more than one disease, which complicates the treatment process [7]. In addition, nurses deal with patients with complex medical histories, as these patients may have medical records that include multiple surgeries, medical procedures, or repeated hospitalizations [8]. Therefore, providing nursing care for these cases requires a deep understanding of each case, its symptoms, and its specific treatment requirements to manage the chronic disease.

Continuous care and close follow-up by nursing contribute effectively to the treatment and management of chronic diseases and improve patient outcomes [9]. This includes regular assessments, continuous monitoring of vital signs, and coordination of various health interventions. This helps nurses identify any changes or deterioration in the patient's condition and intervene quickly to avoid additional complications that affect the safety and lives of patients [10]. In addition to the therapeutic and clinical skills of nurses in managing and treating chronic diseases, critical thinking skills, effective communication, and teamwork are essential factors that help nurses manage chronic diseases [11].

Therefore, nurses should work closely with other medical teams to coordinate care and develop comprehensive treatment plans that consider the health status of each patient. This process may include periodic meetings, exchange of opinions, and joint decision-making to ensure the provision of integrated care that contributes to improving patient outcomes [11,12].

In Saudi Arabia, modern models have been implemented in primary care to address the increasing burden of chronic diseases on the health system, such as the unified health record, which enhances the role of nurses in the management of chronic diseases and improves patient outcomes [13]. Accordingly, this review aims to discover the role of nurses in managing chronic diseases.

What is a chronic disease?

A chronic disease is a long-term health condition, usually lasting longer than three months, for which there is no known cure. Unlike acute diseases, the duration of the disease, rather than its specific symptoms, is the basis for defining a chronic disease. Common examples include heart disease, cancer, diabetes, and arthritis [14].

Chronic diseases affect physical and emotional health, limiting daily activities and contributing to isolation, depression, and financial stress due to ongoing treatment. In Saudi Arabia, the cost of managing chronic diseases is estimated to be around \$90 billion spent annually on healthcare. The high costs of treating chronic diseases and the inability of many patients to afford appropriate care led to poor health outcomes and increased health care expenditures [15].

Comprehensive Care Plan for Managing Chronic Conditions

Managing chronic conditions effectively in nursing care settings requires the development of a detailed, patient-centered care plan. This plan should be customized to meet the individual's specific health needs, goals, and any co-existing conditions or complications they may have.

1. Patient Assessment

A comprehensive assessment is essential to the management and treatment of chronic diseases. This includes physical examinations, laboratory tests, and a detailed review of the patient's medical history, which allows for an accurate determination of the patient's health status and the development of treatment plans. This comprehensive assessment also allows nurses to identify current symptoms that are affecting the patient's quality of life and determine any necessary interventions [4,16].

2. Key Components of the Care Plan

Treatments: To manage chronic diseases, it is necessary to determine the treatments and medications that are appropriate for the patient's condition. This includes determining the dosage, timing, and possible side effects, which provides a comprehensive approach to managing chronic diseases [17].

Interventions: Nursing supports lifestyle modifications for patients with chronic conditions as an essential part of the management of these chronic conditions. The nursing care plan should include recommendations for dietary changes that help manage symptoms or improve overall health, such as reducing salt intake for patients with hypertension. Exercise programs

should be designed to increase physical activity, improve cardiovascular health, and assist with weight management [18].

3. Monitoring and Evaluation

Continuous monitoring of patients with chronic diseases helps evaluate the effectiveness of the nursing care plan and make necessary adjustments. Regular checkups are also essential to track the patient's health status, measure vital signs, and assess progress. In some cases, remote monitoring tools may be used to track vital signs and symptoms between visits, ensuring continuous assessment of the patient's health [19].

4. Patient Education and Support

Patient education is an essential component of the care plan, ensuring that patients fully understand their chronic condition and how to manage it effectively. Educating patients about their medications, including how to take them properly and recognize potential side effects, is critical. Additionally, teaching patients how to monitor their own health, such as tracking their blood sugar levels or blood pressure, empowers them to take an active role in their care. Support should also be provided to help patients overcome any barriers to adherence, such as financial challenges or emotional struggles, ensuring they remain committed to their care plan [20].

Collaboration between different disciplines within the nursing care team

Effective management of chronic conditions requires the combined expertise of different healthcare professionals. In nursing care settings, fostering collaboration between different disciplines is essential to providing coordinated and comprehensive patient care.

1. Regular Communication

Establishing clear and consistent communication channels between healthcare professionals is vital to successful interdisciplinary collaboration. This can be accomplished through regular multidisciplinary team meetings, case discussions, or the use of electronic health record systems to facilitate real-time information exchange. Open communication ensures that all members of the healthcare team are well informed about the patient's condition and treatment plan [21].

2. Shared Decision Making

Incorporating input from all members of the healthcare team during decision-making processes ensures that the care plan is comprehensive and considers multiple perspectives. Nurses, physicians, pharmacists, and other healthcare providers each bring their unique expertise. Collaborative decision-making results in a more comprehensive, patient-centered approach that addresses all aspects of chronic condition management [21,22].

3. Collaborative Care Planning

Developing care plans in collaboration with all relevant healthcare professionals is critical to tailoring interventions to meet the individual needs of patients. A comprehensive care plan considers insights and recommendations from diverse team members, ensuring that the plan is comprehensive, personalized, and aligned with the patient's health goals and preferences [12].

4. Care Coordination

Clear protocols for care coordination are essential to facilitate smooth transitions between different healthcare providers and settings. Effective communication regarding patient information, medication management, and follow-up care ensures that patients receive consistent, well-organized care [23]. It can also reduce treatment gaps and improve the overall quality of care for patients with chronic conditions.

Digital Technologies and Their Role in Enhancing the Ability of Nurses to Manage Chronic Diseases

Technological advances have greatly enhanced the management of chronic conditions in nursing care settings, improving access to care and patient outcomes through digital tools.

1. Telemedicine Platforms

Telemedicine enables virtual consultations, reducing the need for in-person visits. This convenience saves time and costs while allowing patients to stay connected to their healthcare team for timely care and support [24].

2. Wearable Devices

Wearable devices help monitor vital signs, track physical activity, and provide real-time patient health information [25].

3. Mobile Applications

Mobile applications provide medication reminders, symptom tracking, and easy access to personal health information. They also facilitate seamless communication between patients and nurses, ensuring continuous care and timely updates to treatment plans [26].

Continuous assessment and improvement of chronic condition management

For effective management of chronic disease patients by nursing, regular and continuous assessment of patient outcomes and encouragement of adherence to care plans are essential. This improves patient outcomes [27]. Implementing initiatives that aim to improve the outcomes of chronic disease patients and adopting evidence-based nursing practices are essential to achieving better outcomes in chronic disease management. In addition, effective collaboration between clinical teams and research institutions helps healthcare settings stay aligned with the latest research and best practices and engages patients in the assessment process to tailor care to their individual needs [28]. Continuing professional development for healthcare providers also ensures that they remain up to date with developments in chronic disease management, leading to improved patient outcomes and more effective care [27,28].

Conclusion:

Chronic disease management requires a comprehensive nursing approach, ongoing assessments, development, follow-up, updating and continuous monitoring of nursing care plans, which significantly enhance nursing's ability to improve outcomes for patients with chronic diseases. The role of nursing is further enhanced by technological innovations such as telemedicine and wearable devices, which facilitate continuous care and better management of health conditions. Collaborative efforts between nurses and other healthcare professionals ensure that patients receive comprehensive and personalized care that meets their physical and emotional needs. As the healthcare landscape evolves, nurses' expertise in chronic disease management will continue to shape the future of patient care, leading to improved health outcomes and a more sustainable healthcare system.

References

1. van der Cingel, Margreet, and Jasperina Brouwer. "What makes a nurse today? A debate on the nursing professional identity and its need for change." *Nursing philosophy* 22.2 (2021): e12343.
2. Lukewich, Julia, et al. "Effectiveness of registered nurses on patient outcomes in primary care: a systematic review." *BMC health services research* 22.1 (2022): 740.
3. Cummings, Greta G., et al. "The essentials of nursing leadership: A systematic review of factors and educational interventions influencing nursing leadership." *International journal of nursing studies* 115 (2021): 103842.
4. Griffin CD; CPHQ; CCM. A Primary Care Nursing Perspective on Chronic Disease Prevention and Management. *Dela J Public Health*. 2017;3(1):78-83. Published 2017 Mar 22. doi:10.32481/djph.2017.03.011
5. Haque, Mainul, et al. "Strengthening primary health-care services to help prevent and control long-term (chronic) non-communicable diseases in low-and middle-income countries." *Risk management and healthcare policy* (2020): 409-426.
6. Holmen H, Larsen MH, Sallinen MH, et al. Working with patients suffering from chronic diseases can be a balancing act for health care professionals - a meta-

- synthesis of qualitative studies. BMC Health Serv Res. 2020;20(1):98. Published 2020 Feb 10. doi:10.1186/s12913-019-4826-2
7. Chang, Esther, and Amanda Johnson. *Living with chronic illness and disability: Principles for nursing practice*. Elsevier Health Sciences, 2021.
8. Butler M, Schultz TJ, Halligan P, et al. Hospital nurse-staffing models and patient- and staff-related outcomes. Cochrane Database Syst Rev. 2019;4(4):CD007019. Published 2019 Apr 23. doi:10.1002/14651858.CD007019.pub3
9. Ge J, Zhang Y, Fan E, et al. Community Nurses Are Important Providers of Continuity of Care for Patients With Chronic Diseases: A Qualitative Study. Inquiry. 2023;60:469580231160888. doi:10.1177/00469580231160888
10. Watkins T, Whisman L, Booker P. Nursing assessment of continuous vital sign surveillance to improve patient safety on the medical/surgical unit. J Clin Nurs. 2016 Jan;25(1-2):278-81. doi: 10.1111/jocn.13102. Epub 2015 Nov 4. PMID: 26531215; PMCID: PMC4738424.
11. Morton, Patricia Gonce, and Paul Thurman. *Critical care nursing: a holistic approach*. Lippincott Williams & Wilkins, 2023.
12. Karam M, Chouinard MC, Poitras ME, et al. Nursing Care Coordination for Patients with Complex Needs in Primary Healthcare: A Scoping Review. Int J Integr Care. 2021;21(1):16. Published 2021 Mar 19. doi:10.5334/ijic.5518
13. Al Khashan, Hesham, et al. "Primary health care reform in Saudi Arabia: progress, challenges and prospects." *Eastern Mediterranean Health Journal* 27.10 (2021): 1016-1026.
14. Bernell S, Howard SW. Use Your Words Carefully: What Is a Chronic Disease?. Front Public Health. 2016;4:159. Published 2016 Aug 2. doi:10.3389/fpubh.2016.00159
15. Almalki ZS, Alahmari AK, Alshehri AM, et al. Investigating households' out-of-pocket healthcare expenditures based on number of chronic conditions in Riyadh, Saudi Arabia: a cross-sectional study using quantile regression approach. BMJ Open. 2022;12(9):e066145. Published 2022 Sep 28. doi:10.1136/bmjopen-2022-066145
16. Dansie EJ, Turk DC. Assessment of patients with chronic pain. Br J Anaesth. 2013;111(1):19-25. doi:10.1093/bja/aet124
17. Fernandez-Lazaro, C.I., García-González, J.M., Adams, D.P. et al. Adherence to treatment and related factors among patients with chronic conditions in primary care: a cross-sectional study. BMC Fam Pract 20, 132 (2019). <https://doi.org/10.1186/s12875-019-1019-3>
18. Patel R, Sina RE, Keyes D. Lifestyle Modification for Diabetes and Heart Disease Prevention. [Updated 2024 Feb 12]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2024 Jan-. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK585052/>
19. Becking-Verhaar FL, Verweij RPH, de Vries M, Vermeulen H, van Goor H, Huisman-de Waal GJ. Continuous Vital Signs Monitoring with a Wireless Device on a General Ward: A Survey to Explore Nurses' Experiences in a Post-Implementation Period. Int J Environ Res Public Health. 2023;20(10):5794. Published 2023 May 11. doi:10.3390/ijerph20105794
20. Bhattad PB, Pacifico L. Empowering Patients: Promoting Patient Education and Health Literacy. Cureus. 2022;14(7):e27336. Published 2022 Jul 27. doi:10.7759/cureus.27336
21. Bendowska A, Baum E. The Significance of Cooperation in Interdisciplinary Health Care Teams as Perceived by Polish Medical Students. Int J Environ Res Public Health. 2023;20(2):954. Published 2023 Jan 5. doi:10.3390/ijerph20020954

22. Légaré F, Adekpedjou R, Stacey D, et al. Interventions for increasing the use of shared decision making by healthcare professionals. *Cochrane Database Syst Rev*. 2018;7(7):CD006732. Published 2018 Jul 19. doi:10.1002/14651858.CD006732.pub4
23. Khatri R, Endalamaw A, Erku D, et al. Continuity and care coordination of primary health care: a scoping review. *BMC Health Serv Res*. 2023;23(1):750. Published 2023 Jul 13. doi:10.1186/s12913-023-09718-8
24. Boppana, Venkat Raviteja. "Impact of Telemedicine Platforms on Patient Care Outcomes." *Innovative Engineering Sciences Journal* 2.1 (2022).
25. Teixeira, Eduardo, et al. "Wearable devices for physical activity and healthcare monitoring in elderly people: A critical review." *Geriatrics* 6.2 (2021): 38.
26. Al-Arkee, Shahd, et al. "Mobile apps to improve medication adherence in cardiovascular disease: systematic review and meta-analysis." *Journal of medical Internet research* 23.5 (2021): e24190.
27. Burnier, Michel. "The role of adherence in patients with chronic diseases." *European Journal of Internal Medicine* 119 (2024): 1-5.
28. Engle RL, Mohr DC, Holmes SK, et al. Evidence-based practice and patient-centered care: Doing both well. *Health Care Manage Rev*. 2021;46(3):174-184. doi:10.1097/HMR.0000000000000254