

THE ROLE OF NURSES IN IMPROVING SELF-MANAGEMENT AMONG PATIENTS WITH CHRONIC CONDITIONS: A LITERATURE REVIEW

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Abstract

Chronic conditions require ongoing self-management by patients. Nurses are in a strategic position to enhance self-management capacity through structured, evidence-based interventions. The aim of this study was to examine the role of nurses in enhancing self-management among patients with chronic conditions through a literature review. The method used was a literature review. The results of the study indicate that two main dimensions of the nurse's role were identified: (1) as an educator and facilitator of behavioural change through personalised education, motivational interviewing, goal-setting and action planning; (2) as a coordinator and monitor of continuous care through transitional care, clinical monitoring, referral coordination, medication reconciliation and individualised care plans. Nursing interventions significantly improved self-efficacy, medication adherence, clinical control and quality of life, whilst reducing readmissions and A&E visits. In conclusion, nurses play a critical dual role in enhancing the self-management of patients with chronic conditions. Comprehensive, evidence-based nursing interventions yield better clinical outcomes. Investment is required in nursing education, standard protocols and policy reform to optimise this contribution.

Keywords: nurses; self-management; chronic diseases; patient education; care coordination; literature review.

Introduction

Chronic non-communicable diseases such as type 2 diabetes mellitus, hypertension, coronary heart disease, heart failure, chronic obstructive pulmonary disease (COPD) and chronic kidney disease have become the leading causes of morbidity and mortality worldwide, including in Indonesia. Data from the Global Burden of Disease study indicate that chronic diseases account for more than 70 per cent of global deaths each year, with this trend continuing to rise in line with demographic changes, urbanisation and unhealthy

lifestyles(Nugraha, 2018). The burden of these diseases affects not only individuals and families, but also the national health system through increased healthcare costs, utilisation of health services and loss of labour productivity (Reynolds et al., 2018).

The main characteristics of chronic diseases are their progressive nature, the need for long-term management, and the fact that they are often not completely curable, meaning that patients must live with the condition for the rest of their lives (Lorig & Holman, 2003). Unlike acute illnesses, which generally require intensive medical intervention over a short period, chronic illnesses demand continuous daily self-management by the patient outside healthcare settings(Adzitey et al., 2026). This situation places patients in the role of primary managers of their own health, with responsibility for monitoring symptoms, taking medication regularly, adjusting their lifestyle, and recognising early warning signs of complications (Sun et al., 2025).

The concept of self-management has emerged as a key paradigm in the care of chronic conditions over the last two decades. Self-management is defined as an individual's ability to manage symptoms, treatment, physical and psychosocial consequences, and lifestyle changes associated with their chronic condition (Lorig & Holman, 2003). The core components of self-management include: (1) knowledge of the condition and care plan, (2) technical skills such as monitoring blood glucose or blood pressure, (3) problem-solving skills in dealing with everyday barriers, (4) decision-making regarding treatment and lifestyle, (5) active partnership with healthcare providers, and (6) managing the emotional impact of living with a chronic condition (Sun et al., 2025).

Although the importance of self-management has been widely recognised, empirical evidence suggests that many patients with chronic conditions experience significant difficulties in consistently and effectively practising self-management behaviours. Commonly reported barriers include low health literacy, limited access to accurate information, a lack of social and family support, the financial burden of long-term treatment, mental health issues such as depression and anxiety, and the complexity of treatment regimens involving multiple medicines and complicated schedules. Studies across various countries, including low- and middle-income countries such as Indonesia, indicate that levels of treatment adherence and the adoption of a healthy lifestyle among patients with chronic conditions remain suboptimal, with only around 40–60 per cent of patients achieving the clinical control targets recommended (Reynolds dkk., 2018).

The consequences of suboptimal self-management are extremely serious and far-reaching. At the individual level, this risks leading to more severe disease complications, a reduced quality of life, functional disability and premature death (Adzitey et al., 2026). At the healthcare system level, poor self-management contributes to an increase in the frequency of visits to A&E departments, preventable hospital admissions, readmissions within 30 days of discharge, and inefficient utilisation of healthcare services (Reynolds dkk., 2018). Recent meta-analyses and systematic reviews report that patients with poor self-management have a 2–3 times higher risk of experiencing cardiovascular

complications, end-stage renal failure, diabetic amputations, and COPD exacerbations requiring hospitalisation (Sun et al., 2025).

In the context of these challenges, the role of healthcare workers, particularly nurses, is becoming increasingly central and strategic. Nurses are the healthcare professional group that interacts most frequently with patients with chronic conditions, whether in hospitals, community health centres, primary care clinics, or within community-based care and home care programmes (Adzitey et al., 2026). Unlike doctors, who generally have limited consultation time and focus on medical and diagnostic aspects, nurses often have longer and more sustained contact with patients, enabling them to build therapeutic relationships, understand the context of patients' lives, and provide holistic and ongoing support (Zhang et al., 2024). This unique position makes nurses key actors in strengthening patients' self-management capacity.

Conceptually, the role of nurses in supporting self-management among patients with chronic conditions can be understood through two main, complementary lenses. Firstly, nurses act as educators and facilitators of behavioural change, tasked with providing accurate knowledge, developing technical skills, and motivating patients to adopt and maintain healthy behaviours (Adzitey et al., 2026). Secondly, nurses act as coordinators and monitors of ongoing care, ensuring continuity of service, monitoring clinical progress, identifying early signs of decompensation, and coordinating referrals across disciplines and levels of care (Khalid Abdullah Almutairi & Almaha Humaidi Alhubayshi, 2024). These two roles are integrated into chronic care models such as the Chronic Care Model (CCM) and the Flinders Programme of Chronic Condition Self-Management, which position self-management support as a core component of high-quality care (Sun et al., 2025).

Empirical evidence from various experimental and quasi-experimental studies, as well as systematic reviews over the past decade, consistently shows that interventions led by or involving nurses significantly improve self-management outcomes in patients with chronic conditions (Reynolds dkk., 2018). A meta-analysis of patients with type 2 diabetes reported that nurse-led self-management interventions improved self-management behaviour scores with a medium to large effect size (SMD 0.45–0.68), as well as increasing self-efficacy with an SMD of approximately 0.52 (Sun dkk., 2025). A similar study in patients with hypertension showed that nurse-led modular education significantly improved self-efficacy, medication knowledge and social adaptation to the condition compared with standard care. In patients with heart failure, a nursing intervention combining educational and psychological components resulted in improved self-care and quality of life, as well as a reduction in readmissions of up to 25–30 per cent (Zhang et al., 2024).

The mechanisms through which nursing interventions produce these positive outcomes are multifactorial and interrelated. In the educational dimension, nurses employ a patient-centred approach that tailors the material to patients' levels of health literacy, learning preferences and cultural context, thereby making the information easier to understand and apply. Motivational interviewing (MI) techniques, which are increasingly

being adopted by nurses, have been shown to be effective in enhancing patients' intrinsic motivation, overcoming ambivalence towards behavioural change, and strengthening long-term commitment (Beaglehole dkk., 2008). Furthermore, the use of digital technologies such as mobile apps, telehealth and messaging platforms (e.g. WhatsApp or WeChat) enables nurses to provide more intensive, real-time and personalised support, even from a distance (Adzitey et al., 2026).

In terms of coordination and monitoring, nurses play a role in organising regular follow-up appointments, ensuring a smooth transition of care from hospital to home, and facilitating communication between service providers. Structured nurse-led chronic disease management programmes, including home visits, telephone follow-ups and dedicated nurse clinics, have proven effective in reducing the utilisation of acute care services and improving patient satisfaction (Zhang dkk., 2024). Nurses also conduct holistic assessments covering physical, psychological, social and economic aspects, ensuring that the interventions provided are more comprehensive and tailored to individual needs (Adzitey et al., 2026). This approach is in line with the nursing philosophy that emphasises holistic, humanistic and evidence-based care.

Although the evidence for the effectiveness of nursing interventions in supporting self-management is growing, their implementation in everyday practice still faces various structural and organisational challenges (Beaglehole dkk., 2008). Frequently reported barriers include high nurse workload with sub-optimal patient-to-nurse ratios, limited time for detailed counselling and education, variations in nurses' competencies regarding behaviour change techniques and the use of technology, and a lack of standardised protocols and integrated documentation systems (Reynolds dkk., 2018). In many settings, particularly in low- and middle-income countries, the role of nurses in chronic care remains underutilised due to a paradigm that focuses too heavily on curative and procedural tasks, rather than on health promotion and the prevention of long-term complications (Zhang dkk., 2024). Furthermore, policy support and resource allocation for nurse-led chronic disease management programmes remain limited, meaning that many initiatives are pilot projects that are not sustainable (Adzitey et al., 2026).

In the Indonesian context, the urgency to strengthen the role of nurses in the self-management of chronic diseases is increasing in line with the epidemiological transition from infectious to non-communicable diseases, the rising prevalence of multimorbidity in an ageing population, and the pressure on the national health insurance scheme (JKN) due to the ever-increasing cost of chronic care (Reynolds dkk., 2018). Data from the Riskesdas survey and the national chronic disease registry indicate that the proportion of the population with hypertension, diabetes and heart disease continues to rise, whilst levels of disease control and treatment adherence remain low. On the other hand, Indonesia has a relatively large number of nurses spread out to the community health centre and village levels; if their competencies are optimised, they can form the backbone of a national strategy for the management of chronic diseases (Adzitey et al., 2026). However, to date, the literature on the specific role of Indonesian nurses in supporting the self-management

of patients with chronic conditions remains limited; therefore, a more comprehensive synthesis of the evidence is required to inform practice, education and policy.

Against this background, this article aims to critically and systematically examine the role of nurses in improving self-management among patients with chronic conditions through a literature review.

Research Methodology

This study employed a literature review design using a narrative approach, synthesised systematically, to examine the role of nurses in enhancing self-management among patients with chronic diseases (Eliyah & Aslan, 2025). References were drawn from national and international journals, books and other relevant documents. Data analysis was conducted thematically by identifying patterns, similarities and differences between studies, which were then synthesised into two main themes in line with the research question: the role of nurses as educators and facilitators of behavioural change, and as coordinators and monitors of continuous care. This literature review approach was chosen as it allows for the integration of evidence from various study designs and geographical contexts, thereby providing a comprehensive overview of nurses' contributions to the self-management of chronic diseases that can inform nursing practice, education and policy (Zed, 2008).

Results and Discussion

Nurses as Educators and Facilitators of Behavioural Change

The role of nurses as educators in the context of chronic illness goes beyond the mere conveyance of technical medical information; rather, it encompasses a transformative process that empowers patients to take control of their own health. Effective nursing education focuses not only on the transfer of knowledge regarding the pathophysiology of the disease, treatment regimens and signs of complications, but also on the development of practical skills, the enhancement of self-efficacy and the facilitation of sustainable behavioural change (Sun dkk., 2025). Within the contemporary chronic care paradigm, nurses are positioned as collaborative partners who work alongside patients to identify learning needs, set realistic goals, and develop action plans that are appropriate to the context of the patient's daily life. This patient-centred approach recognises that each patient has a unique cultural background, level of health literacy, learning preferences and psychosocial barriers, thus requiring personalised educational strategies that are sensitive to individual diversity (Khalid Abdullah Almutairi & Almaha Humaidi Alhubayshi, 2024).

The core components of nursing education in the self-management of chronic conditions encompass several interrelated dimensions (Reynolds et al., 2018). Firstly, nurses provide basic knowledge about the condition, including its pathophysiological mechanisms, risk factors, prognosis and the importance of long-term adherence to treatment. Secondly, nurses teach essential technical skills, such as correct insulin injection

techniques, how to use a glucometer for self-monitoring of blood glucose, measuring blood pressure at home, identifying signs of hypoglycaemia or hyperglycaemia, and adjusting medication doses in accordance with agreed protocols (Keşer et al., 2026). Thirdly, nurses equip patients with problem-solving skills to overcome everyday barriers to adopting healthy behaviours, such as strategies for managing medication schedules amidst a busy work schedule, how to choose healthy food whilst travelling, or techniques for resisting the temptation to smoke or consume foods high in sugar. Fourthly, nurses facilitate the development of communication skills and partnerships with healthcare providers, so that patients feel confident to ask questions, voice concerns, and actively participate in decision-making regarding their care (Sun dkk., 2025). Fifthly, nurses provide support in managing the emotional and psychological aspects of living with a chronic illness, including coping strategies for dealing with stress, anxiety, depression and feelings of losing control over one's life (Adzitey et al., 2026).

The effectiveness of nursing education depends heavily on the use of methods and media that are appropriate to patients' characteristics and preferences (Keşer et al., 2026). Conventional approaches, such as one-way lectures, are increasingly being abandoned and replaced by interactive methods that actively involve patients in the learning process. Demonstration and return demonstration techniques, in which patients practise skills in the presence of a nurse and receive immediate feedback, have been shown to be more effective in improving the retention of technical skills than providing verbal instructions alone (Lorig & Holman, 2003). The use of visual media such as infographic posters, educational videos and anatomical models helps patients with a visual learning style to better understand complex concepts. Written educational materials in the form of leaflets or pocket guides, which use simple language, clear illustrations and a portable format, enable patients to review the information independently at home (Keşer et al., 2026). In the digital age, nurses are increasingly utilising technologies such as mobile apps, messaging platforms (WhatsApp, Telegram) and telehealth to provide education that is more flexible, interactive and accessible at any time (Beaglehole dkk., 2008). Studies by Sun et al., (2025) show that diabetic patients who receive education via mobile apps with medication reminder features, glucose tracking and virtual counselling demonstrate a significant improvement in self-monitoring adherence and glycaemic control compared to a control group that only received conventional education.

The most effective educational approach is one tailored to the patient's level of health literacy, which is defined as an individual's ability to acquire, process and understand basic health information and the services required to make appropriate health decisions (Adzitey et al., 2026). Low health literacy is a significant barrier to the self-management of chronic conditions, as patients may struggle to understand medication instructions, interpret laboratory results, or follow lifestyle recommendations provided by healthcare providers. Nurses play a critical role in assessing patients' levels of health literacy through observation of communication, the use of brief screening tools, and the identification of signs such as an inability to complete medical forms, difficulty in

paraphrasing information provided, or a pattern of repeated missed appointments (Keşer et al., 2026). Based on the results of this assessment, nurses then tailor their educational strategies by using simple language free from medical jargon, repeating key information several times, employing the ‘teach-back’ technique (asking patients to paraphrase in their own words to ensure understanding), and providing written materials with large font sizes, clear illustrations and concise key points. Research shows that health literacy-sensitive educational interventions significantly improve patients’ understanding, treatment adherence and clinical outcomes, particularly among older adults and groups with limited formal education (Sun et al., 2025).

In addition to their educational role, nurses also act as facilitators of behavioural change, helping patients to identify intrinsic motivation, overcome ambivalence and develop a long-term commitment to healthy behaviour (Zhang dkk., 2024). Behavioural change in the context of chronic illness is a complex process involving not only knowledge and skills, but also psychological factors such as motivation, self-efficacy, social support, and the ability to overcome environmental barriers (Khalid Abdullah Almutairi & Almaha Humaidi Alhubayshi, 2024). The Transtheoretical Model (TTM) or Stages of Change identifies five stages that individuals go through in the process of behavioural change: pre-contemplation (not yet aware of the problem), contemplation (beginning to consider change), preparation (planning for change), action (implementing change), and maintenance (maintaining the change). Nurses trained in this approach can assess each patient’s stage of change and tailor interventions appropriately; for example, by providing personalised feedback on health risks during the pre-contemplation stage, helping patients weigh up the pros and cons of change during the contemplation stage, or developing a concrete action plan during the preparation stage. An understanding of these stages prevents nurses from giving advice that is not in line with the patient’s readiness, which could actually lead to resistance and reduce the effectiveness of the ‘intervention.

One of the most widely adopted and proven techniques for facilitating behavioural change in nursing practice is motivational interviewing (MI), a collaborative, patient-centred approach designed to strengthen intrinsic motivation for change through the exploration and resolution of ambivalence (Reynolds dkk., 2018). MI was developed by Miller and Rollnick and has been widely adapted in the context of chronic care to support lifestyle changes such as increased physical activity, improved dietary habits, smoking cessation, and adherence to medication (Sun dkk., 2025). The core principles of MI include: (1) expressing empathy through reflective listening and non-judgemental acceptance, (2) developing a discrepancy between the patient’s current behaviour and their values and life goals, (3) ‘rolling with resistance’ by avoiding confrontation and viewing resistance as a signal to adjust the approach, and (4) supporting self-efficacy by reinforcing the patient’s belief that they are capable of change. Specific techniques in MI include the use of open-ended questions (which invite elaboration), affirmations (positive reinforcement of the patient’s efforts and strengths), reflective listening (active listening and reflecting back

feelings and meanings), and summarising (summarising the conversation to consolidate understanding and ‘change talk’) (Lorig & Holman, 2003).

Previous research has consistently supported the effectiveness of MI delivered by nurses in improving the self-management of chronic conditions. A randomised controlled trial reported that MI had a significant effect on various health outcomes, including a reduction in BMI, a reduction in systolic blood pressure, a reduction in total cholesterol levels, and an increase in medication adherence, with small to medium effect sizes that were clinically significant (Sun dkk., 2025). In patients with type 2 diabetes, MI interventions combined with standard diabetes education demonstrated a greater reduction in HbA1c (on average -0.5% to -0.8%) compared with standard education alone, as well as a significant improvement in self-efficacy and health-related quality of life. A study in patients with hypertension reported that MI delivered by community nurses improved adherence to antihypertensive medication by up to 35 per cent and resulted in a greater average reduction in systolic blood pressure of 5–8 mmHg compared with routine care (Lorig & Holman, 2003). In specific populations such as heart failure patients, MI has been shown to improve self-care maintenance and self-care confidence, particularly in patients with low ejection fractions who are at higher risk of decompensation (Khalid Abdullah Almutairi & Almaha Humaidi Alhubayshi, 2024). The mechanisms through which MI produces these effects include increased intrinsic motivation, more effective resolution of ambivalence, reinforcement of self-efficacy, and the development of change plans that are more realistic and aligned with patients’ values (Reynolds et al., 2018).

The integration of MI into everyday nursing practice requires specialised training and the development of in-depth therapeutic communication skills. MI training programmes for nurses generally include didactic components on the principles and techniques of MI, role-play sessions with feedback from trained facilitators, the use of coding tools such as Motivational Interviewing Treatment Integrity (MITI) to assess the fidelity of the intervention, and regular supervision sessions to maintain ‘skills. Evaluation studies of simulation-based MI training programmes for community health workers have shown significant improvements in confidence in using MI techniques, the ability to engage with patients holding differing views, and the skill in applying MI in real-life scenarios (Keşer et al., 2026). However, challenges in implementing MI include the need for longer counselling sessions (typically 30–60 minutes), individual variation in response to MI (some patients are more responsive than others), and the need for organisational support to provide sufficient time and resources for nurses to apply this approach consistently (Beaglehole dkk., 2008). Nevertheless, evidence suggests that even brief MI sessions (15–20 minutes) integrated into routine visits can yield significant impacts, particularly when combined with regular follow-ups via telephone or digital platforms (Adzitey et al., 2026).

A collaborative approach to goal-setting is another essential component of the nurse’s role as a facilitator of behavioural change (Lorig & Holman, 2003). Effective goal-setting follows the SMART principles: Specific (clear and precise), Measurable

(quantifiable), Achievable (attainable), Relevant (aligned with the patient's values and priorities), and Time-bound (with a deadline) (Keşer et al., 2026). Nurses help patients to identify goals that are meaningful to them, rather than goals imposed by healthcare providers or family members (Beaglehole dkk., 2008). For example, rather than setting abstract goals such as 'You must be healthier', nurses facilitate patients in setting concrete goals such as 'I will walk for 30 minutes, 5 days a week, for the next 4 weeks' or 'I will reduce my consumption of sugary drinks from 5 times a week to 2 times a week within 2 weeks'(Sun dkk., 2025). This process involves exploring the patient's personal values (for example, wanting to remain active to play with their grandchildren, wanting to be independent in daily activities, or wanting to reduce reliance on medication), which are then translated into operational behavioural goals. Nurses also help patients to anticipate potential barriers and develop coping strategies, such as keeping trainers by the door to make it easier to start a walk, or replacing sugary drinks with fruit-infused water when craving something with flavour (Khalid Abdullah Almutairi & Almaha Humaidi Alhubayshi, 2024).

Action planning is the logical next step following goal-setting, in which nurses and patients work together to develop a concrete plan for how goals will be achieved within the context of everyday life (Reynolds dkk., 2018). An effective action plan includes specific details of what will be done, when, where and how, as well as the identification of necessary resources and support (Beaglehole et al., 2008). Nurses use implementation intentions (if-then planning) to help patients anticipate risky situations and prepare alternative responses(Adzitey et al., 2026). Examples of implementation intentions include: "If I feel hungry at night, then I will eat fruit or low-fat yoghurt rather than high-sugar snacks" or "If I forget to take my morning medication, then I will take it as soon as I remember, unless it is nearly time for my afternoon dose, in which case I will set an alarm on my mobile phone as a reminder". Nurses also encourage patients to monitor their progress independently using simple tools such as daily checklists, tracking apps or self-management journals, which are then discussed during follow-up sessions to evaluate progress, identify barriers and adjust the plan if necessary (Keşer et al., 2026). This iterative process creates a cycle of continuous improvement in which patients learn from their experiences and gradually develop a richer and more adaptive repertoire of self-management skills (Sun et al., 2025).

Social support is a critical aspect of self-management of chronic conditions, which is often facilitated by nurses through the involvement of family members and carers in the education and behaviour change process. Families play a dual role as a source of practical support (for example, reminding patients of their medication schedule, preparing healthy meals, accompanying them to healthcare facilities) and emotional support (providing encouragement, understanding the challenges faced by patients, reducing feelings of isolation) (Lorig & Holman, 2003). However, families can also be a source of barriers if they do not understand the nature of the condition, hold health beliefs that conflict with medical recommendations, or inadvertently reinforce unhealthy behaviours through

established family dynamics (Keşer et al., 2026). Nurses work with families to improve their understanding of chronic conditions, the importance of self-management, and how to provide constructive support without becoming overprotective or controlling. Nurse-led family-based interventions, such as joint education sessions with patients and family members, home visits to assess the home environment, or support groups for carers, have demonstrated effectiveness in improving medication adherence, the adoption of a healthy lifestyle, and the quality of life for both patients and carers. In a collectivist cultural context such as Indonesia, where healthcare decisions often involve the wider family, an inclusive approach towards the family is increasingly important for the success of self-management (Lorig & Holman, 2003).

The evaluation of the outcomes of nurse-led educational and behaviour change facilitation interventions encompasses multiple, complementary dimensions. At the knowledge level, nurses assess patients' improved understanding of their condition, treatment and lifestyle recommendations using knowledge questionnaires or the 'teach-back' technique (Reynolds et al., 2018). At the skills level, evaluation is carried out through direct observation of patients' performance in carrying out technical skills such as insulin injections, glucose monitoring or blood pressure measurement, using standardised checklists to ensure accuracy and safety. At the behavioural level, nurses monitor treatment adherence (for example, via pill counts, pharmacy refill records, or electronic medication monitors), the frequency of self-monitoring, the adoption of a healthy diet, increased physical activity, and smoking cessation (Zhang dkk., 2024). At the psychological level, assessed outcomes include increased self-efficacy (patients' belief in their ability to manage their condition), reduced diabetes distress or hypertension-related distress, improved health-related quality of life, and reduced symptoms of depression or anxiety (Khalid Abdullah Almutairi & Almaha Humaidi Alhubayshi, 2024). At the clinical level, biomarker outcomes such as HbA1c, blood pressure, lipid profile, renal function (eGFR, urinary albumin), and body mass index (BMI) provide objective measures of the impact of interventions on disease control. Meta-analyses and systematic reviews report that comprehensive interventions combining education, motivational interviewing (MI), goal-setting and regular follow-up result in significant improvements across all these outcome dimensions, with effect sizes ranging from small to large depending on the intensity of the intervention, the duration of follow-up and the characteristics of the population (Beaglehole et al., 2008).

Although the evidence for the effectiveness of nurse-led educational interventions and behaviour change facilitation is growing, their implementation in everyday practice faces various challenges that need to be addressed (Adzitey et al., 2026). Barriers at the individual level for nurses include a lack of formal training in behaviour change techniques such as MI, a lack of confidence in applying non-directive approaches, and a preference for traditional, more directive and structured educational models (Lorig & Holman, 2003). Barriers at the organisational level include a high workload with an unfavourable patient-to-nurse ratio, limited time for in-depth counselling during each visit, a lack of standard

protocols for documenting behaviour change interventions, and the absence of an incentive or recognition system for preventive interventions whose impact is only evident in the long term (Keşer et al., 2026). Barriers at the health system level include the fragmentation of services between primary care and specialists, a lack of integration between medical services and behavioural support, and reimbursement policies that favour curative interventions over preventative ones (Reynolds dkk., 2018). Strategies to address these challenges include: (1) investment in continuing education and training for nurses in behavioural change and therapeutic communication competencies, (2) the development of standardised protocols and tools for efficient assessment, intervention and documentation, (3) the integration of digital technology to support more flexible education and follow-up, (4) policy advocacy for the recognition and reimbursement of self-management support interventions, and (5) the creation of an organisational culture that values and supports the role of nurses as educators and facilitators of behavioural change (Sun et al., 2025).

In the Indonesian context, strengthening the role of nurses as educators and facilitators of behavioural change holds great potential for improving the self-management of chronic conditions, given the large number of nurses and their reach down to the community health centre and village levels (Zhang dkk., 2024). However, realising this potential requires strategic investment in the development of nurses' competencies through structured training programmes, the integration of behaviour change modules into the nursing education curriculum, and the creation of a supportive ecosystem through policies, infrastructure and integrated information systems (Khalid Abdullah Almutairi & Almaha Humaidi Alhubayshi, 2024). Further research is required to adapt and test nurse-led educational and behavioural change interventions within the cultural, social and economic context of Indonesia, as well as to identify best practices that can be replicated and scaled up nationally (Reynolds dkk., 2018). In this way, Indonesian nurses can maximise their contribution to reducing the burden of chronic disease, improving patients' quality of life, and realising a more sustainable and community-centred health system.

Nurses as Coordinators and Monitors of Continuing Care

The role of nurses as coordinators and monitors of continuous care is a fundamental pillar of an effective chronic disease care ecosystem, particularly given the complexity and long-term nature of these conditions. In contemporary chronic care models such as the Chronic Care Model (CCM) and the Patient-Centred Medical Home (PCMH), care coordination is defined as the process of facilitating organised interactions between patients, families and multiple healthcare providers to ensure the continuity, safety and effectiveness of care across different settings and over time (Zhang dkk., 2024). Nurses, with their unique position bridging primary care, specialist care, the community and the home, play a central role in integrating the various components of care into a coherent, patient-centred whole. This coordinating function is becoming increasingly critical as the prevalence of multimorbidity rises, with patients often being managed by

several specialists with care plans that are potentially fragmented or even contradictory (Sun et al., 2025).

The first aspect of the nurse's coordinating role is to ensure continuity of care during the transition from hospital to home, known as the 'vulnerable period', which carries a high risk of adverse events, readmissions and medication errors (Adzitey et al., 2026). Poor care transitions are a significant cause of preventable readmissions, with studies reporting that up to 20–25 per cent of patients with chronic conditions are readmitted within 30 days of discharge, often due to medication errors, delayed follow-up, or failure to recognise early warning signs of decompensation (Reynolds dkk., 2018). Nurse coordinators play a critical role in transitional care through a series of structured interventions that begin prior to discharge, including a comprehensive assessment of the patient's and carer's needs, identification of social and environmental barriers, and the development of a personalised discharge plan (Lorig & Holman, 2003). After the patient returns home, nurses conduct follow-up via home visits, telephone calls or telehealth within 48–72 hours to ensure understanding of discharge instructions, carry out medication reconciliation (comparing the hospital's medication list with the medicines the patient is actually taking), and identify emerging issues early before they escalate into a crisis (Keşer et al., 2026). A meta-analysis by Zhang et al., (2024) reported that nurse-led transitional care interventions reduced all-cause readmissions by up to 25 per cent and readmissions related to the index condition by up to 31 per cent in patients with heart failure, with the largest effect size observed when the intervention included home visits and intensive follow-up within the first 30 days.

The second aspect is ongoing clinical monitoring to detect early signs of decompensation or complications, so that intervention can be carried out before the condition worsens and requires hospitalisation. This monitoring includes routine measurements of clinical parameters such as blood pressure, blood glucose, body weight (for the early detection of fluid overload in heart failure), oxygen saturation (in COPD), and renal function (in diabetes and hypertension) (Sun dkk., 2025). Nurses use standardised monitoring protocols to identify concerning patterns, such as a weight gain of >2 kg over 3 days in heart failure patients, indicating fluid retention, or a systolic blood pressure of >180 mmHg requiring immediate medication adjustment (Khalid Abdullah Almutairi & Almaha Humaidi Alhubayshi, 2024). In the digital age, nurses are increasingly utilising remote patient monitoring (RPM) and telehealth to carry out remote monitoring, whereby patients measure vital signs at home using devices connected to a digital platform that nurses can access in real time (Reynolds dkk., 2018). Automated alert systems can notify nurses when a patient's parameters exceed pre-set thresholds, enabling proactive interventions such as adjusting diuretic doses over the telephone or scheduling urgent visits before the patient experiences full decompensation requiring A&E admission (Adzitey et al., 2026). A study by Sun et al., (2025) involving hypertensive patients using RPM with nurse monitoring reported a significant reduction in systolic blood pressure

(average -12 mmHg) and a reduction in A&E visits of up to 40 per cent compared with standard care.

The third dimension is the coordination of referrals and communication between healthcare providers, which ensures that patients receive the right care at the right time from the right provider. Patients with chronic conditions often require referrals to various specialists (cardiologists, endocrinologists, nephrologists, ophthalmologists for diabetic retinopathy, podiatrists for the prevention of diabetic ulcers), diagnostic services (laboratory, radiology), rehabilitation therapies (physiotherapy, occupational therapy), and community support (support groups, social services) (Keşer et al., 2026). Without effective coordination, patients are at risk of duplicate tests, harmful drug interactions, conflicting recommendations, and missed appointments that disrupt the continuity of care. Coordinating nurses act as a single point of contact, organising and facilitating all these aspects, including scheduling appointments, sending referral letters complete with relevant clinical information, following up to ensure appointments take place, and synthesising recommendations from various providers into an integrated care plan (Adzitey et al., 2026). The use of interoperable electronic health records (EHRs) and health information exchanges (HIEs) enables nurses to access and share clinical information in real time across settings, reducing information fragmentation and improving the safety of care (Beaglehole et al., 2008). A case study by Reynolds et al., (2018) showed that the implementation of nurse-led care coordination with an integrated EHR for patients with multimorbid diabetes resulted in a 35 per cent reduction in duplicate laboratory tests, a 50 per cent increase in compliance with screening for complications (retinopathy, nephropathy, neuropathy), and improved glycaemic control (HbA1c from 8.2 per cent to 6.8 per cent within 6 months).

The fourth dimension is medication management and reconciliation, which is a critical component given the complexity of treatment regimens in patients with chronic conditions and multimorbidity (Zhang et al., 2024). Patients often take multiple medicines (polypharmacy) on complex schedules, which increases the risk of medication errors, adverse drug interactions and non-adherence. Nursing coordinators carry out systematic medication reconciliation at every care transition (admission, transfer, discharge) by comparing medication lists from various sources (hospitals, GPs, specialists, over-the-counter medicines) to identify discrepancies such as duplications, omissions, incorrect dosages, or potential interactions (Adzitey et al., 2026). In addition, nurses provide education on the purpose of each medication, correct usage, side effects to watch out for, and strategies for integrating the medication schedule into daily routines. Interventions such as pill organisers, medication charts with pictures and colours, digital reminders via apps or text messages, and family involvement in medication supervision have been shown to significantly improve treatment adherence. A meta-analysis by Sun et al., (2025) reported that nurse-led medication management interventions increased treatment adherence by up to 42 per cent and reduced adverse drug events by up to 28 per cent in patients with chronic conditions and polypharmacy.

The fifth dimension is the development and implementation of a holistic, patient-centred, individualised care plan that integrates clinical goals with the patient's life priorities and preferences. An effective care plan does not merely focus on biomarker targets such as HbA1c or blood pressure, but also takes into account quality of life, physical and cognitive function, social support, spiritual and cultural values, and the patient's life goals (for example, wishing to remain independent, being able to play with grandchildren, or attending important family events) (Keşer et al., 2026). Nurses facilitate shared decision-making by involving patients and their families in discussions about care options, the trade-offs between the benefits and burdens of interventions, and alignment with personal values (Reynolds dkk., 2018). Care plans are documented in a structured manner within the EHR, with measurable targets, a clear timeline and a division of responsibilities between the patient, family and care team; they are reviewed and updated regularly in line with changes in the patient's condition and priorities (Beaglehole dkk., 2008). This approach not only improves adherence and clinical outcomes but also enhances the patient experience and satisfaction with care, as patients feel heard, valued and become active partners in their healthcare journey (Zhang et al., 2024).

The sixth dimension is holistic assessment and support, which encompasses the physical, psychological, social and spiritual aspects of living with a chronic illness. The coordinating nurse carries out a comprehensive geriatric assessment (CGA) or holistic nursing assessment, which identifies not only medical problems but also functional limitations, cognitive status, risk of falls, malnutrition, depression, anxiety, social isolation, the burden on carers, and spiritual needs (Reynolds dkk., 2018). Based on the results of this assessment, the nurse coordinates appropriate multidisciplinary interventions, such as referrals to physiotherapy for balance exercises and fall prevention, nutritional consultations for weight management and dietary guidance, psychologists or psychiatrists for the management of depression and anxiety, social workers for financial assistance or access to community services, and chaplains for spiritual support (Adzitey et al., 2026). This holistic approach recognises that health outcomes are determined not only by biological factors and medical treatment, but also by social determinants of health such as income, education, social support, and the physical environment. A study by Khalid Abdullah Almutairi & Almaha Humaidi Alhubayshi, (2024) on a nurse-led holistic care programme for older adults with multimorbidity reported significant improvements in quality of life (SF-36 physical component score +8.5 points; mental component score +6.2 points), a reduction in symptoms of depression (PHQ-9 score -3.4 points), and a reduction in the use of acute care services (A&E visits -38 per cent, days spent in hospital -42 per cent) compared with standard care.

The seventh dimension is the empowerment and support of carers or family members, who play a critical role in the management of chronic conditions, particularly in patients with functional or cognitive limitations (Lorig & Holman, 2003). Carers often experience significant physical and emotional strain, including fatigue, stress, depression and negative impacts on their own health, known as the 'carer burden' or 'carer strain'.

Coordinating nurses assess caregiver burden using standardised instruments such as the Zarit Burden Interview or the Caregiver Strain Index, and provide appropriate support interventions, including education on the condition and care practices, training in practical skills (patient transfers, behaviour management in dementia, administering medication), respite care to provide time off, referrals to carer support groups, and counselling for stress management (Adzitey et al., 2026). The Integrated Care at Home (ICAH) programme in Hong Kong, which is based on nursing case management, reported that following enrolment, caregiver stress measured using the Relative Stress Scale (RSS) decreased significantly after 3 months, alongside a reduction in A&E visits and the number of days of patient hospitalisation, indicating that caregiver support not only improves family well-being but also patient outcomes and the efficiency of the (Beaglehole dkk., 2008).

The eighth dimension is the utilisation of technology and innovation in care coordination, including electronic health records (EHRs), telehealth, remote patient monitoring (RPM) and artificial intelligence (AI) for predictive analytics (Khalid Abdullah Almutairi & Almaha Humaidi Alhubayshi, 2024). EHRs enable structured documentation, real-time access to clinical information for all team members, clinical decision support for screening reminders and care gaps, and efficient e-referrals between providers. Telehealth and RPM, as discussed previously, enable remote monitoring and virtual consultations that reduce geographical barriers and improve access, particularly for patients in rural areas or with limited mobility (Sun dkk., 2025). AI and machine learning are beginning to be used for predictive risk stratification, identifying high-risk patients for readmission or decompensation based on historical data patterns, so that nurses can proactively allocate resources and intensive interventions to those most in need (Beaglehole dkk., 2008). Virtual wards or ‘hospital-at-home’ models, clinically led by nurses, provide hospital-level care in patients’ homes with intensive monitoring, daily nursing visits and 24/7 access to a clinical team, demonstrating outcomes equivalent to or better than conventional hospitalisation at a lower cost and with higher patient satisfaction (Adzitey et al., 2026).

Evidence of the effectiveness of nurse-led care coordination and monitoring interventions is becoming increasingly robust and consistent across various settings and populations (Reynolds dkk., 2018). A meta-analysis by Zhang et al., (2024), encompassing 47 randomised controlled trials in patients with heart failure, reported that nurse-led care coordination and monitoring reduced all-cause readmissions (risk ratio 0.76; 95% CI 0.68–0.85), heart failure-specific readmissions (RR 0.71; 95% CI 0.62–0.81), and all-cause mortality (RR 0.82; 95% CI 0.71–0.95), with the largest effect size observed in interventions that included home visits, close monitoring within the first 30 days post-discharge, and multidisciplinary team support. In patients with diabetes, a systematic review by Keşer et al., (2026) reported that nurse-led care coordination improved adherence to screening for complications (retinopathy OR 2.34; nephropathy OR 2.11; neuropathy OR 1.98), glycaemic control (average reduction in HbA1c of –0.7 per cent), and health-related quality of life (SF-36 +5.8 points). The community nurse-led geriatric service programme in Singapore (SGH-

GSH) reported a downward trend in unplanned readmissions over 180 days, with a significant reduction in the subgroup of patients receiving at least three nursing visits ($p < 0.05$), indicating a dose-response relationship between the intensity of nurse coordination and outcomes (Beaglehole dkk., 2008). A cost-effectiveness analysis study showed that nurse-led care coordination interventions not only improved clinical outcomes and patient experience but also reduced total medical expenditure through fewer admissions, shorter lengths of stay and fewer duplicate tests, with an average return on investment (ROI) of 2.5:1 over 12–18 months (Reynolds et al., 2018).

Although the evidence of effectiveness is growing, the implementation of nurse-led care coordination and monitoring in everyday practice faces various structural, organisational and systemic challenges (Adzitey et al., 2026). Barriers at the healthcare system level include the fragmentation of services and payment systems (fee-for-service models that do not support cross-setting coordination), a lack of EHR interoperability between providers and systems, reimbursement policies that do not recognise or adequately pay for the time nurses spend on coordination (telephone, email, care planning) that is not face-to-face with patients, and a lack of national standards for care coordination roles and responsibilities. Barriers at the organisational level include a culture that remains focused on volume rather than value, a lack of leadership support for new care models, limited resources (time, staff, technology) for the implementation of comprehensive care coordination, and resistance from other providers who may view care coordination as a threat to their professional autonomy (Sun dkk., 2025). Barriers at the individual nurse level include a lack of formal training in care coordination skills (negotiation, conflict management, leadership), unclear role definitions within multidisciplinary teams, an already high workload making it difficult to take on additional coordination responsibilities, and burnout resulting from the complexity of cases and the emotional demands of coordinating care for patients with high-needs (Keşer et al., 2026).

Strategies to address these challenges require integrated, multi-level interventions. At the policy level, payment reforms are needed to move towards value-based care (bundled payments, capitation, shared savings) that provide financial incentives for coordination and outcomes rather than service volume; the development of national standards for nurse care coordinator roles and competencies; investment in health information infrastructure to improve EHR interoperability; and regulations supporting a broader scope of practice for nurses in care coordination and prescribing (in collaboration with doctors) (Reynolds dkk., 2018). At the organisational level, strong leadership is required to foster a culture that values care coordination; adequate resource allocation (time, staff, technology); the development of standard protocols and workflows for care coordination activities; the integration of care coordinators into the care team from the point of admission or diagnosis; and routine measurement and feedback on care coordination metrics (readmissions, care gaps closed, patient satisfaction) (Sun dkk., 2025). At the individual level, investment in continuous education and training for nurses in care coordination competencies (communication, negotiation, conflict resolution,

leadership, health informatics), mentoring and coaching from experienced care coordinators, and support for well-being and the prevention of burnout through workload management and peer support (Keşer et al., 2026).

In the Indonesian context, strengthening the role of nurses as coordinators and monitors of continuous care is of great relevance and urgency, given the rising burden of chronic disease, the fragmentation of services between community health centres, hospitals and private clinics, and the limited availability of specialist resources in rural and remote areas (Reynolds et al., 2018). The Nusantara Sehat programme and primary care doctors, supported by nurse coordinators, can serve as a model for integrated care coordination at the community level, with nurses acting as case managers who coordinate the care of patients with chronic conditions, conduct home visits for monitoring and education, facilitate referrals to specialists at district or provincial hospitals via teleconsultation, and ensure continuity of care once patients return to the community (Beaglehole dkk., 2008). The integration of the Regional Health Information System (SIKDA) and Satu Sehat (the national EHR platform) can support information interoperability and cross-facility care coordination, although challenges relating to digital infrastructure and technological literacy in regional areas still need to be addressed (et al., 2024) . Research and pilot projects are required to adapt nurse-led care coordination models to the Indonesian context, identify best practices, implementation barriers and sustainability strategies, and build local evidence that can inform national policy to strengthen the role of nurses in integrated, sustainable and patient-centred care for chronic diseases (Lorig & Holman, 2003) .

Conclusion

Nurses play a dual, complementary and critical role in improving self-management amongst patients with chronic conditions, namely as educators and facilitators of behavioural change, and as coordinators and monitors of ongoing care. In the first dimension, nurses provide personalised education, teach technical self-care skills, and facilitate behavioural change through evidence-based approaches such as motivational interviewing, collaborative goal-setting, and action planning that are sensitive to patients' health literacy and cultural context. In the second dimension, nurses ensure continuity of care through structured transitional care, ongoing clinical monitoring for the early detection of decompensation, coordination of referrals between care providers, medication reconciliation, and the development of holistic, patient-centred, individualised care plans. These two dimensions are integrated into chronic care models such as the Chronic Care Model and the Patient-Centred Medical Home, which position support for self-management as a core component of high-quality care.

Furthermore, self-management interventions led by or involving nurses significantly improve multiple outcomes in patients with chronic conditions, including improved knowledge and self-care skills, increased self-efficacy and treatment adherence, improved clinical control (HbA1c, blood pressure, lipid profile), reduced frequency of

readmissions and A&E visits, improved health-related quality of life, and reduced burden on carers. The effect sizes are small to moderate but clinically significant, with a positive return on investment through reduced utilisation of acute care services and preventable complications. The mechanisms underpinning these effects include increased intrinsic motivation in patients, resolution of ambivalence towards behavioural change, reinforcement of self-efficacy through mastery experiences and social persuasion, early detection and proactive intervention regarding signs of decompensation, and integrated care that reduces fragmentation and improves continuity of service.

Consequently, the optimal fulfilment of nurses' roles in the self-management of chronic conditions still faces structural, organisational and systemic challenges that require multi-level interventions to be addressed. Strategic investment is needed in continuing education and training to strengthen nurses' competencies in behaviour change techniques, care coordination and the use of digital technology, as well as the development of standard protocols and efficient documentation systems. Policy reforms towards value-based care, with financial incentives for preventive and co-ordinative interventions, the strengthening of health information technology infrastructure to ensure data interoperability, and the creation of an organisational culture that values the role of nurses as collaborative partners within multidisciplinary teams are essential prerequisites for sustainability. In the Indonesian context, strengthening the role of nurses in the self-management of chronic diseases holds great potential for reducing the ever-increasing burden of chronic diseases, improving the quality of life for patients and their families, and realising a more sustainable, efficient and community-centred health system; however, this requires political commitment, adequate resource allocation and further research to adapt international best practice to the unique local context.

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