

Review

The Role of Health Education Among Nurses in Promoting Medication Adherence: Strategies and Outcomes

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Abstract

The involvement of nurses in patient care has been shown to enhance patients' ability to self-manage their medications and promote discussions about adherence issues. Medication non-adherence continues to be a pervasive and persistent problem, highlighting the need for effective communication between physicians, nurses, and patients. Despite its critical importance, conversations about non-adherence are often inadequately addressed by both physicians and patients, for reasons that are not fully understood. As a result, nurses frequently take on the responsibility of bridging this communication gap by providing reassurance and motivating patients to follow their prescribed medication regimens. Given that medication preparation and administration are fundamental aspects of nursing practice and considering the crucial role nurses play in ensuring medication safety, their involvement in practical procedures within hospitals and community health centers is essential. This includes the identification and reporting of medication errors. However, the knowledge level among practicing nurses has been found to be inadequate. Current literature suggests that nurses often lack sufficient education, which impedes their ability to develop effective communication skills, particularly regarding medication adherence. It is insufficient for nurses to acquire these skills solely upon entering practice; they would be more confident with enhanced healthcare knowledge and training integrated into their educational programs. Nurses bear significant pharmacotherapeutic responsibilities, influenced by both the healthcare setting and their educational training. Strategies to improve patient adherence to treatment and to identify adverse drug reactions have been well-documented in the literature. It is essential for nurses to develop more innovative strategies to ensure consistent follow-ups and to make educational activities more engaging and beneficial for patients. The objective of this review is to assess the current literature on the role of health education by nurses in promoting medication adherence.

Keywords: Nurse, Health, Education, Medication, Adherence

Introduction

Medications are effective only when patients adhere to them, underscoring the crucial importance of medication adherence. The World Health Organization defines medication adherence as "the degree to which a person's behavior aligns with the agreed recommendations from a healthcare provider" (1). While the terms adherence and compliance are often used interchangeably, they have distinct definitions. Several factors can contribute to poor medication adherence, including forgetfulness, a lack of understanding of the medication's importance, side effects, cost, and the complexity of medication regimens (2).

Medication adherence is critical for achieving optimal treatment outcomes. Non-adherence presents significant challenges, affecting both patients and the healthcare system (1). Patients who do not adhere to their medication regimens may experience complications such as disease progression, increased mortality, reduced functional abilities, and a lower quality of life. Additionally, non-adherence can result in medication wastage, higher healthcare costs, and increased utilization of medical resources, including nursing homes, hospital visits, and admissions (3). The success of treatment depends on both the medication's efficacy and the patient's adherence to the prescribed regimen (1). It is imperative for patients, healthcare providers, and healthcare systems to collaborate to enhance medication adherence. Employing a combination of adherence strategies, rather than a single approach, is more effective in improving patients' compliance with their treatment plans.

Nurses are instrumental in promoting medication adherence through education, support, and monitoring. As primary healthcare contacts, nurses provide crucial information on the importance of adhering to medication regimens. They also help patients develop strategies to overcome adherence barriers, such as using pill organizers, setting medication reminders, and simplifying medication schedules (2). Despite the positive clinical outcomes associated with medication adherence, inadequate patient education can result in misunderstandings

about diseases or medication regimens. This ineffective education may reinforce cultural and religious beliefs that negatively influence attitudes toward medication, leading to non-adherence (4). Various factors contribute to medication non-adherence, including issues related to the patient, treatment, and healthcare professionals. Patients may forget to take their medications, administer incorrect dosages, or believe that the medication is unnecessary (5). These issues can prevent patients from fully benefiting from their therapy, potentially increasing morbidity, mortality, hospital admissions, and healthcare costs (5). Therefore, it is essential for nurses to have adequate knowledge and training in patient communication to build trust with their patients and enhance medication adherence.

The extent of practicing registered nurses' knowledge in medication remains largely unexplored; however, several studies have highlighted gaps in their understanding of pharmacology and drug management (6-8). Typically, nurses receive foundational training in pharmacology, drug management (including regulations, storage, drug preparation, and patient administration), and dosage calculations through university programs and on-the-job training guided by experienced senior nurses (9). Healthcare professionals, including nurses, are under increasing scrutiny to ensure they provide safe and effective care. Similarly, nursing education programs face growing pressure to graduate individuals proficient in safe patient care. To meet this demand, these programs design curricula, employ qualified instructors, and curate educational experiences to train and develop competent, effective nurses (10). Consequently, nurses are expected to have comprehensive knowledge not only in medication management but also in communication skills that facilitate medication adherence.

A review of studies by Coster et al. explores the impact of nursing on patient outcomes, demonstrating that employing well-trained nurses improves health outcomes in primary care settings and that nurse-led care enhances patient satisfaction and medication adherence (11). Various interventions generally enhance adherence, with

counseling often being a crucial component of effective strategies. Multifaceted and tailored interventions are the most effective, and patients benefit significantly from continuous follow-up (12).

This article reviews various studies to evaluate the impact of health education provided by nurses on promoting medication adherence among patients. Currently, the role of health education by nurses in enhancing medication adherence is not well-documented and requires further high-quality research. Therefore, this review aims to elucidate the responsibilities of nurses in health education to foster medication adherence.

Methodology

A thorough literature search was conducted on May 27, 2024, using PubMed, ScienceDirect, and ResearchGate databases. This search employed medical subject headings (MeSH) and pertinent keywords such as 'nurse', 'education', 'medication adherence', 'health', 'strategies', 'outcomes', 'study', 'healthcare professional' and combinations of related terms. The inclusion criteria encompassed all relevant peer-reviewed articles involving human subjects and available in English. Additionally, to ensure comprehensive coverage, a manual search for publications was performed via Google Scholar using the reference lists of the identified studies. There were no restrictions on publication date, type, or participant age.

Discussion

The aim of this study was to investigate the role of nursing education in promoting medication adherence. There is a consensus within educational programs and legislation that medication preparation and administration are core components of nursing practice (13). Pharmacotherapeutic activities, which encompass the ordering, storage, preparation, and administration of medications, go beyond basic medication management. However, it remains uncertain whether pharmacotherapeutic responsibilities such as providing medication information, monitoring adherence, and ensuring drug safety are consistently carried out by nurses

with diplomas, bachelor's, or master's degrees who are not licensed to prescribe medications. These tasks require specific competencies, and research suggests that nurses often feel inadequately trained for pharmacotherapeutic practices (14-16). Consequently, educational attainment may significantly influence nursing practice patterns. Enhancing educational programs can help produce more competent nurses capable of promoting and teaching health education to patients, including medication adherence.

Role of nurses in medication adherence

Although there is substantial evidence on medication adherence, few studies highlight the crucial role that nurses play in facilitating patient adherence. Adherence is often considered the patient's responsibility; however, support from informal caregivers and primary care professionals, including nurses, general practitioners, pharmacists, and home care providers, is essential (5). For example, in the Netherlands, home care is provided by nurses of varying educational levels, including registered nurses, licensed practical nurses, and nurse aides, directly in patients' homes (5).

Nurses can educate patients about their medications, addressing aspects such as purpose, dosage, side effects, and potential interactions. They can also correct any misconceptions or concerns patients may have about their medications (17). Additionally, nurses can monitor patients' medication adherence through regular follow-up visits, phone calls, or telehealth appointments. By overseeing adherence and addressing emerging issues, nurses play a vital role in preventing complications and improving health outcomes.

A study by Dijkstra et al. found that 66.3% of 349 home care nurses observed patients' medication non-adherence during daily care (5). A meta-analysis revealed that educational interventions were only marginally more effective than standard care at healthcare facilities in improving medication adherence (4). However, Stewart et al. (18) reported that favorable outcomes were achieved with frequent follow-ups (12 contacts) using a bimodal approach that included both verbal and written

educational interventions. Therefore, increasing the frequency of communication with healthcare professionals may enhance adherence by reducing forgetfulness, which is a significant barrier to medication adherence (4).

Extent of health education among nurses

While most studies emphasize the importance of patient education for medication adherence, few examine the educational level of nurses and their capacity to promote better adherence (4). A study by Simonsen et al. found that nurses' medication knowledge was inadequate, posing a risk for medication errors (9). This deficiency in basic knowledge can be attributed to the limited focus on drug management in nursing programs. Medication management is often confined to the practice field, heavily relying on senior-to-junior instruction through on-the-job training, which lacks adequate integration of practical skills with theoretical and critical thinking. The relationships between knowledge, skills, and risk of failure are complex, involving factors such as self-esteem, adaptability, and confidence, which are under-researched areas (20).

A study by Javadzade et al. (21) found that nurses generally have limited knowledge regarding health literacy strategies and do not effectively apply them in practice. Those with greater knowledge demonstrated better practices in utilizing these strategies to support patient education and medication adherence. The study recommends providing additional or refresher courses to all nurses to empower them and enhance their health education capabilities.

Another study by Pueyo-Garrigues et al. (22), indicated that clinical nurses possess some skills and personal attributes for health education practice, but they lack the necessary health education knowledge for competent practice. This study suggested that effective education and training, along with supportive organizational cultures, are key to enhancing nurses' health education competence. Nurses often do not adhere to health-promoting lifestyles, compromising their health status and quality of care. A study conducted by Tsai et al.

(23), aimed to evaluate the health-promoting effects of an eHealth intervention among nurses compared with conventional handbook learning. The findings showed that the eHealth education intervention is an effective and readily accessible tool for enhancing health-promoting behavior among nurses and may have greater potential for encouraging participation and learning than conventional handbook learning or in-hospital health-promotion activities.

The instructional strategies used in both academic and clinical components of nursing education significantly influence the development of critical thinking, clinical decision-making abilities, and psychomotor skills in new graduates (10). Enhancing educational programs can therefore produce more competent nurses capable of promoting and teaching health education to patients, including medication adherence. Orientation programs for new graduates and ongoing continuing education for nurses are crucial in helping practitioners improve their knowledge, skills, and expertise, ensuring high-quality patient care and optimized outcomes while minimizing errors. Continuous evaluation of nursing competence is essential for promoting patient safety.

Strategies for improving health education and promoting medication adherence among nurses

Clinical education in nursing faces several challenges. A qualitative study by Farzi et al. (24) involved discussions with nursing students about the obstacles they encounter in their training programs. From the students' perspective, fear of incessant criticism from clinical educators during procedures and concerns about providing improper care to patients impair the learning process. Another challenge is insufficient readiness for clinical practice due to a lack of self-confidence and theoretical clinical knowledge. The incompetency of clinical educators and an unpleasant atmosphere towards nursing students in clinical environments also pose significant challenges.

In clinical settings, doctors and nurses often pay more attention to medical students than to other health sciences students, including nursing students, leading to negative attitudes among the latter.

However, the participants also suggested strategies for improving health education among nurses. They recommended using nursing education models and methods such as the nursing process, simulation, and peer learning in clinical education. These approaches are believed to enhance critical thinking and skill development through simulation without the fear of harming patients. Additionally, involving senior students could boost confidence. The participants emphasized that cooperation without fear, blame, or suppression between the clinical environment and faculty would create a supportive atmosphere, alleviating students' fears, and concerns, and making education more effective (24).

In a study by Sharifirad et al. (25), a statistically significant correlation was found between the use of health literacy strategies and factors such as marital status, participation in retraining courses, employment type, job history, and job status. According to the study's findings, perceived behavioral control is a powerful determinant of nurses' intentions and behaviors in using health literacy strategies for patient education, as well as in enhancing medication adherence.

There should be a greater emphasis on enhancing nurses' knowledge. Nurses need to be capable of assessing their expertise and improving it through ongoing education. Knowledge assessment tests can be utilized to evaluate expertise (5). Additionally, integrating methods such as simulation training, as suggested by Farzi et al., into educational programs can enhance health education among nurses. The Institute of Medicine's report, "To Err is Human: Building a Safer Health Care System," recommends simulation training as an effective strategy to prevent clinical errors (26). The report advocates for healthcare organizations and educational institutions to develop and utilize simulation for training novice practitioners, problem-solving, and crisis management, especially when introducing new and potentially hazardous procedures and equipment (26). Human patient simulation, an emerging teaching method, allows learners to develop, refine, and apply their knowledge and skills in realistic clinical scenarios through

interactive learning experiences tailored to their educational needs. Utilizing simulation as an educational strategy can enhance patient safety and improve care outcomes by allowing learners to engage in clinical scenarios and interventions in a safe, supervised environment without posing risks to patients (10).

Enhancing medication adherence is a complex and multifaceted issue that requires a comprehensive approach. Non-adherence to medications can lead to severe consequences, including symptom exacerbation, increased healthcare costs, and even mortality in some cases (2). Therefore, identifying effective strategies to enhance nurses' education on promoting medication adherence is crucial for improving patient outcomes. To boost medication adherence, healthcare providers can employ various strategies: patient education, simplifying medication regimens, using reminder systems, involving family members or caregivers, addressing financial barriers, and monitoring adherence (2). While various strategies and methods can be employed by nursing health programs to ensure a high level of knowledge among nurses, there is still insufficient literature on how to enhance health education among nurses, particularly regarding medication adherence.

The findings of this study are vital for the health education of nurses involved in supporting patients' medication adherence and offer recommendations for further research. The large number of studies reviewed helps to draw more refined conclusions regarding the study's aim defines the strength of this study. This review offers a new perspective on the importance of nursing education and its positive influence on medication adherence among patients. However, the literature review highlighted that certain studies are limited to past times, emphasizing the necessity for additional research. This should encompass an evaluation of nursing knowledge concerning medication adherence and their practical application in this area. Additionally, regular training sessions should be organized for nurses to enhance their ability to promote medication adherence effectively.

Conclusion

This review emphasizes the significance of health education for nurses in promoting medication adherence. There are various methods to enhance nurse health education and strategies to promote medication adherence. Evidence indicates that nurse-led interventions can improve medication adherence and clinical outcomes in community care settings. However, the literature lacks comprehensive details on the critical role of nurses in patient management, particularly in relation to medication adherence. To strengthen confidence in the efficacy of these interventions, additional high-quality studies focusing on nurses' educational levels and their communication skills are needed.

Disclosure

Conflict of interest

There is no conflict of interest.

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Ethical consideration

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Data availability

Data that support the findings of this study are embedded within the manuscript.

Author contribution

All authors contributed to conceptualizing, data drafting, collection and final writing of the manuscript.

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