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## **Enhancement of Medication Adherence: The Core Role of Nurses –**

### **A Comprehensive Review**

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2. Maternity and child hospital Alhassa
3. King fahad hospital Hofuf
4. Al Khobar Governmental Hospital
5. Erada complex and mental health in dammam
6. Prince saud bin jalawy hospital
7. Al-klabiah health center
8. Alkhafji general hospital

## ABSTRACT

Medication adherence is critical in managing acute and chronic diseases, reducing hospitalizations, and improving patient outcomes. Non-adherence is a persistent challenge that compromises treatment efficacy and increases healthcare costs. Nurses play a central role in enhancing medication adherence through patient education, motivational support, and systematic monitoring. This review explores the factors influencing medication adherence, strategies employed by nurses to improve compliance, and evidence-based practices in various healthcare settings. Recent advancements in technology and multidisciplinary approaches to support adherence are also discussed.

### 1. Introduction

Medication adherence is defined as the extent to which patients follow prescribed medical instructions regarding dosage, timing, and frequency of their medications. The prevalence of long-term health conditions is high and rising with an ageing population. In the USA, an estimated 117 million people are living with a long-term condition (1). In the UK, it is estimated that 15 million people live with a chronic physical illness, with this estimated to increase to 18 million by 2025 (2). The prescription of a pharmaceutical medicine is one of the most common interventions in developed health economies where medicines are essential treatments for most long-term conditions. However, nonadherence remains a significant barrier to achieve optimum outcomes from appropriately prescribed medicines, especially in long-term conditions. In a classic review, the World Health Organisation (WHO) estimated that around half of medicines prescribed for long-term conditions were not taken as advised (3), and a 2018 report from the Organisation for Economic Co-operation and Development estimated that poor adherence results in 200,000 premature deaths in Europe each year (Organisation for Economic Co-operation and Development (OECD), Despite advancements in pharmacology, non-adherence remains a widespread issue, with the World Health Organization (WHO) estimating adherence rates at only 50% for long-term therapies in developed countries(4,5) . Non-adherence contributes to poor clinical outcomes, increased healthcare utilization, and preventable deaths. Nurses, as primary caregivers, are uniquely positioned to address this issue by fostering trust, educating patients, and promoting adherence.

## 2. Factors Affecting Medication Adherence

### 2.1. Patient-Related Factors

- **Lack of Knowledge:** Patients often fail to understand the importance of adhering to medication regimens.
- **Forgetfulness:** Commonly cited as a reason for missing doses, particularly in elderly patients(6).
- **Psychological Barriers:** Anxiety, depression, or fear of side effects may prevent adherence.

### 2.2. Therapy-Related Factors

- **Complex Regimens:** Multiple medications or frequent dosing schedules reduce adherence.
- **Side Effects:** Unpleasant effects deter patients from continuing treatment.

### 2.3. Healthcare System-Related Factors

- **Inadequate Communication:** Poor patient-provider communication impacts adherence.
- **Access Issues:** Limited access to medications due to cost or distance impedes compliance.

## 3. Role of Nurses in Medication Adherence

Nurses act as facilitators in improving adherence by addressing barriers and empowering patients to take an active role in their care.

### 3.1. Patient Education

- **Simplifying Information:** Nurses provide clear, concise explanations about the purpose, benefits, and side effects of medications.
- **Tailored Approaches:** Educational interventions are customized based on the patient's literacy level and cultural background (7,8).

### 3.2. Motivational Support

- **Building Trust:** A trusting nurse-patient relationship encourages open communication.
- **Behavioral Techniques:** Nurses use motivational interviewing and positive reinforcement to inspire adherence.

### 3.3. Systematic Monitoring

- **Adherence Tools:** Nurses utilize medication schedules, pill organizers, and reminders to support patients.
- **Follow-Up:** Regular check-ins help address challenges and reinforce compliance.

## 4. Evidence-Based Strategies for Enhancing Medication Adherence

### 4.1. Technology-Driven Interventions

- **Mobile Apps and Reminders:** Apps like Medisafe or text message reminders improve adherence by tracking medication schedules (Thakkar et al., 2016).
- **Telehealth:** Nurses use telemedicine platforms to provide virtual follow-ups and consultations.

### 4.2. Multidisciplinary Collaboration

- Nurses collaborate with physicians, pharmacists, and social workers to address complex adherence barriers.

### 4.3. Simplification of Regimens

- Involvement in discussions with prescribers about simplifying regimens (e.g., once-daily dosing) enhances patient compliance.

## 5. Challenges in Promoting Adherence

- **Time Constraints:** Nurses in high-demand settings may struggle to dedicate time to adherence counseling.
- **Language Barriers:** Communication gaps can limit the effectiveness of interventions.
- **Health System Limitations:** Shortages of resources or staff can impede systematic adherence monitoring.

## 6. Recent Advances and Research

### 6.1. Artificial Intelligence (AI)

AI-powered tools provide predictive analytics to identify patients at risk for non-adherence, enabling targeted interventions (Bailey et al., 2020).

### 6.2. Gamification

Incorporating gaming elements into adherence apps motivates patients to stick to medication regimens.

### 6.3. Pharmacogenomics

Emerging evidence suggests that tailoring medications to a patient's genetic profile may improve adherence by minimizing adverse effects (9).

## 7. Conclusion

Medication adherence is essential for achieving optimal therapeutic outcomes and reducing healthcare costs. Nurses play a pivotal role in addressing adherence barriers through education, motivation, and monitoring. Incorporating evidence-based strategies, technological tools, and multidisciplinary collaboration into nursing practices enhances patient compliance. Continued research and innovation are needed to address the evolving challenges of medication adherence, ensuring patients receive the full benefits of their prescribed therapies.

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