

11-12-2025

## Medication Adherence Educational Module for Outpatient Nurses

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# Walden University

College of Nursing

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Catherine Oyefunke Omidwura

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Walden University  
2025

Executive Summary: Staff Education Project  
Medication Adherence Educational Module for Outpatient Nurses

by

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Executive Summary Submitted in Partial Fulfillment  
of the Requirements for the Degree of  
Doctor of Nursing Practice

Walden University

November 2025

## Summary

Medication nonadherence remains a key deterrent to high-quality care in the outpatient environment, resulting in ineffective disease control, preventable hospitalization, and rising healthcare costs. Nearly half of patients with chronic illnesses, such as diabetes, high blood pressure, and mental disorders, do not take medication as prescribed. Outpatient nurses, who are at the core of mandating compliance, are often not provided with much formalized education to effectively promote compliance. This Doctor of Nursing Practice (DNP) project addressed this knowledge gap through the development and implementation of an educational module to enhance nurses' knowledge about measures for medication adherence.

The practice question was: In outpatient nurses, how does participation in a nurse-delivered medication adherence educational module, compared to standard practice, impact provider knowledge of medication adherence strategies within a 2-week implementation period? Pre- and posttests were administered to 32 outpatient nurses to gauge their knowledge before and after the educational intervention. There was a highly significant increase in nurse knowledge such that pretest scores averaged 6.34 ( $SD = 1.41$ ; 52.9% of maximum), rose to 9.78 ( $SD = 1.48$ ; 81.5% of maximum) posttest, with statistical significance achieved at  $p < 0.001$ .

This initiative facilitates positive social change by illustrating how formal nurse education regarding medication adherence improves healthcare professionals' knowledge for equitable, patient-focused care. With this program, health systems will be able to achieve improved patient experiences as well as reduced hospitalization and costs.

## **Background**

A practice gap existed in outpatient nursing where limited training on medication adherence strategies reduces the effectiveness of patient support and education. Medication nonadherence remains critical, with an estimated 50% of patients with chronic conditions failing to adhere to their prescribed medication regimens, leading to suboptimal outcomes and escalated healthcare costs (Kardas et al., 2024). Nurse-led interventions, such as programs for health education, counseling on drugs, motivational interviews, reminder systems, and follow-up telephone calls, have emerged as a potential solution to address the problem (Sletvold et al., 2022b). A randomized controlled trial showed that a holistic, 6-week, nurse-led medication self-management program significantly improved adherence, self-management skills, and treatment experiences in older multimorbidity sufferers (Han et al., 2024). These findings identify nurses as important educators in medication adherence interventions, with a focus on structured education programs that prepare them to enhance patient adherence. Implementation of these programs in staff development will improve nurse knowledge, better manage chronic disease, and reduce preventable hospitalization. These programs emphasize nurses' critical accountability for medication adherence, while in the current project, I focused on addressing the outpatient nurses' knowledge gap by implementing a formal education module to improve their understanding of adherence techniques.

## **Purpose**

In this DNP project, I sought to determine the impact of a nurse-delivered medication adherence educational module, compared to standard practice, on outpatient

nurses' knowledge of adherence strategies during the implementation period. This project was necessary because nurses on the front line are usually confronted with gaps in practice to support adherence that hinder their patients' outcomes. Target-specific education will improve their knowledge to improve patient counseling, reduce avoidable hospital admissions, and enhance management of long-term illnesses (Stewart et al., 2022).

### **Literature Review and Search Strategy**

I conducted a literature review with a focus on medication adherence, such as nurses' interventions in outpatient settings and establishing structured educational interventions' effect on facilitating adherence. The searches took place in databases, such as CINAHL, PubMed, ProQuest Nursing & Allied Health Source, and the Cochrane Database of Systematic Reviews, which are renowned sources of peer-reviewed nursing and healthcare literature. The keyword search terms used were *medication adherence*, *nurse education*, *outpatient nursing*, *management of chronic diseases*, and *strategies of patient education*." The Boolean operators AND/OR narrowed down the search results to only include articles on interventions on adherence and the educational preparation of nurses.

The literature search was aimed at articles published in the past 5 years (2020–2025) to capture up-to-date, evidence-based approaches. This yielded systematic reviews, randomized trials, and quality projects on nurse-led interventions to improve adherence. For example, Sletvold et al. (2022) reported nurse-led community education to improve community members' adherence behavior and outcomes. The reviewed literature

highlighted the need for evidence-based, structured nurse education to reduce gaps in practice and improve the management of chronic illness in outpatient services.

### **Evidence to Support Gap in Practice**

Medication nonadherence is a worldwide problem, such that almost 50% of patients with chronic disease do not adhere to prescribed regimes with resultant poor outcomes and elevated healthcare expenditures (Kardas et al., 2024). Outpatient nurses are able to assist in patient teaching and adherence facilitation, yet they frequently do not receive adequate preparation to enable them to do so effectively (Sletvold et al., 2022). Berardinelli et al. (2024b) showed that nurse education interventions enhanced patient understanding and adherence among outpatients and indicated that staff education was essential. Similarly, Bagheri et al. (2021) concluded that nurse counseling enhanced medication adherence. Both endorsed structured educational interventions for nurses to fill knowledge gaps and enhance adherence.

According to the Johns Hopkins Nursing Evidence-Based Practice (JHNEBP) Evidence Level and Quality Guide, Level I evidence supporting this project included systematic reviews and randomized controlled trials, like Bagheri et al. (2021), while Level II evidence included studies, like Berardinelli et al. (2024b). Such evidence provided support for the intentions of this DNP project to prepare outpatient nurses with evidence-based competencies for medication adherence enhancement. Nurse-led interventions are highly effective in demonstrating compliance improvement. Sletvold et al. (2022) established that nurse-led educational approaches resulted in noteworthy improvement in the patients' adherence and management of their illnesses. Berardinelli et

al. (2024) reviewed 22 studies on different types of chronic illness and found face-to-face, nurse-led interventions to be highly effective in improving adherence in the vast majority. In parallel, a randomized controlled study of a 6-week nurse-led self-management and motivational education program indicated significant enhancements in medication compliance, self-management practices, and overall care experiences in older adults with multimorbidity (Han et al., 2022). Another meta-analysis of randomized trials in patients with established metabolic syndrome showed that education programs achieved moderate but statistically significant increases in medication taking and patient knowledge, and these increases were associated with better clinical outcomes, like lowered blood pressure and glycemic control (Kim et al., 2023).

Aside from systematic reviews and meta-analysis, randomized controlled trials have provided high-grade evidence proving that nurse-led education significantly enhances adherence among populations with chronic illnesses. For instance, Hojgaard et al., (2025) established that patients with outpatient cardiovascular illness who were given individual nurse counseling plus reminder devices showed greater adherence scores and reduced readmission rates compared to baseline.

Quasi-experimental and quality improvement projects also support this project further by demonstrating practical application in real-world settings. Targeted education programs in outpatient diabetes clinics enhanced self-reported adherence and medication refill rates, illustrating how even low-key educational programs will deliver quantifiable improvements in practice (Trieu et al., 2025). Correspondingly, pilot programs in community health centers highlighted greater nurse confidence in adherence support

delivery after short, but concise education workshops on their part, exemplifying how staff education will directly affect patient participation and compliance (Alqallaf, 2024). Together, evidence from systematic reviews and meta-analyses, randomized trials, and quality improvement projects within practice provided a strong evidence base to support policy adoption of structured, nurse-led education modules to reduce medication nonadherence in outpatient clinics.

### **Development and Implementation of the Educational Module: Intervention Design and Methods**

This evidence-based practice project was an educational module. The analysis, design, development, implementation, and evaluation (ADDIE) model is a systematic instructional design model employed to ensure structured development of effective educational programs (*Instructional Design Central [IDC]*, 2023). Use of the model begins with analyzing learning needs, knowledge voids, and goals before proceeding to designing teaching strategies, materials, and assessments. The next steps include developing and improving educational materials as well as implementing the program among the target audience. The last step entails program evaluation to determine intervention effectiveness and make adjustments accordingly. For this nurse-led medication adherence education DNP project, the ADDIE model helped me develop the staff education module with a structured, evidence-based approach.

I designed the educational module to highlight the critical role of outpatient nurses in improving their knowledge to aid in the teaching of medication adherence among older adults with chronic conditions. The module's development was grounded on

the ADDIE model's systematic approach to uphold relevance, alignment of evidence, and pedagogical quality. During the analysis phase, contemporary medication adherence writings, best-practice advice, and the project site organization's training needs were surveyed to identify knowledge gaps among outpatient nurses. During the design phase, I established precise learning goals, focusing on increasing nurses' knowledge of adherence barriers, communication skills of patients, and proven tool usage, like the Morisky Medication Adherence Scale (MMAS-8). The development stage involved designing module content on current, peer-reviewed evidence; clinical practice guidelines; and adult learning theory. Teaching materials included PowerPoint presentations, case studies, and interactive discussions based on real-life examples. In the implementation stage, the module was concurrently administered to prospective nurses practicing in an outpatient clinic during an instructor-led course with self-study materials. In the evaluation stage, I analyzed the pre- and post education tests of participants' knowledge, which indicated their learning achievements and points of improvement for future reference.

This project was implemented in a primary care clinic involving 32 staff nurses, consisting of LPNs, RNs, and nurse practitioners. I recruited participants using internal meetings and email announcements from the clinic's administrative staff. All 32 of the outpatient nurses completed the educational module in two scheduled group sessions. The sessions both took place in the clinic staff education and training room, a relaxed facility with audiovisual equipment, to ensure standard delivery and with the aim of reducing

disruption to patient care. The sessions lasted approximately 90 minutes each and included a PowerPoint-designed lecture presentation and case scenarios.

The pretest was administered to participants immediately prior to the start of the session, and the posttest was given at the end of the module. The tests were on-paper examinations with structured, multiple-choice answers. I individually handed out and collected the test, with the participants dropping their completed tests in sealed envelopes at the end of each session. To ensure anonymity, nurses did not provide their names on test forms; rather, each respondent received a special, personally generated code unknown to anyone but them. This permitted the pre- and posttests to be paired for analysis while preserving the participants' identities. Completed paper tests were deposited in a locked cabinet to be opened only by me, and the data were stored in a protected file to preserve participant confidentiality.

### **Results**

I developed the pre- and posttest questions to assess participants' knowledge before and after the intervention (see Appendix B). Paired sample *t* tests were used to analyze the data from the pre- and posttests. There were 32 participants from the project site nursing staff at the medication adherence education training and 100% pre- and posttest completion by participants.

The pre- and posttest scores of the 32 participants are shown in Table 1. The table shows the changes in the participants' knowledge scores after the intervention. Generally, all participants showed positive gains, which means that their posttest scores were higher than their pretest scores in all cases. The results indicate that the training was effective in

enhancing learning outcomes. The pretest scores ranged from 4 (33.3%) to 9 (75%), while post-test scores were in the range of 6 (50%) to 12 (100%). The difference in scores, representing individual improvements, ranged from 2 to 5 points, with most participants showing an increase of 3 to 4 points. This trend indicates that the intervention improved participant knowledge.

**Table 1***Comparison of Participants' Pre- and Posttest Scores*

SN	Pretest score	Posttest score	Difference
SN01	6 (50.0%)	9 (75.0%)	3
SN02	5 (41.7%)	8 (66.7%)	3
SN03	4 (33.3%)	9 (75.0%)	5
SN04	7 (58.3%)	10 (83.3%)	3
SN05	7 (58.3%)	11 (91.7%)	4
SN06	6 (50.0%)	9 (75.0%)	3
SN07	8 (66.7%)	12 (100%)	4
SN08	5 (41.7%)	10 (83.3%)	5
SN09	5 (41.7%)	9 (75.0%)	4
SN10	8 (66.7%)	12 (100%)	4
SN11	8 (66.7%)	10 (83.3%)	2
SN12	7 (58.3%)	10 (83.3%)	3
SN13	7 (58.3%)	11 (91.7%)	4
SN14	6 (50.0%)	10 (83.3%)	4
SN15	6 (50.0%)	8 (66.7%)	2
SN16	6 (50.0%)	9 (75.0%)	3
SN17	8 (66.7%)	10 (83.3%)	2
SN18	5 (41.7%)	9 (75%)	4
SN19	6 (50.0%)	11 (91.7%)	5
SN20	7 (58.3%)	11 (91.7%)	4
SN21	9 (75.0%)	11 (91.7%)	2
SN22	8 (66.7%)	12 (100%)	4
SN23	9 (75.0%)	11 (91.7%)	2
SN24	5 (41.7%)	9 (75.0%)	4
SN25	4 (33.3%)	9 (75.0%)	5
SN26	5 (41.7%)	8 (66.7%)	3
SN27	7 (58.3%)	9 (75%)	2
SN28	6 (50.0%)	10 (83.3%)	4
SN29	7 (58.3%)	12 (100%)	5
SN30	7 (58.3%)	11 (91.7%)	4
SN31	4 (33.3%)	6 (50.0%)	2
SN32	5 (41.7%)	7 (58.3%)	2

The participants' mean pretest knowledge score, as shown in Table 2, was 6.34 ( $SD = 1.41$ ), which is 52.9% of the maximum possible score. After the training, the mean posttest scores significantly increased to 9.78 ( $SD = 1.48$ ) out of a maximum score of 12, equivalent to 81.5%. This improvement in knowledge scores was statistically significant at  $p < 0.001$ , which indicates that the educational intervention had a positive effect on increasing the nurses' knowledge.

**Table 2**

*Comparison of Mean Pre- and Posttest Scores*

Variable	Pretest	Posttest	<i>t</i> value	<i>p</i> value
Mean knowledge score	6.34 ± 1.40	9.78 ± 1.48	-18.602	< .001

### **Organizational Impact**

In this project, the organizational impact was demonstrated through measurable improvements in nurse knowledge regarding medication adherence strategies following completion of the educational module. The posteducation assessment showed significant gains in participants' understanding of adherence barriers, patient communication strategies, and the use of validated tools, such as the MMAS-8, thereby supporting institutional goals for quality patient education and medication safety. Strengthened practices in adherence align with organizational performance metrics on quality, reduce costs associated with readmissions, and promote equity in care delivery (see Berardinelli et al., 2024).

### **Implications for Nursing Practice**

In this project, I found that the education module implementation greatly improved nurses' knowledge of including standardized approaches to assessing medication adherence as a regular aspect of clinical practice. Through integration of evidence-based testing strategies, nurses were educated to detect and intervene on primary barriers (e.g., medication expense, adverse effects, poor health literacy at the point of care). This project involved combining patient-centered strategies, like teach-back, motivational interviewing, and communication, which aided the module's focus on increasing nurses' knowledge to build trust and optimize medication adherence.

Additionally, the project highlights the necessity of interdisciplinary collaboration. Nurses are essential mediators, bridging patients to pharmacists, social workers, and primary care physicians to coordinate solutions, like medication synchronization, pharmaceutical patient assistance programs, and regimen simplification (Nason et al., 2025). Moreover, incorporating adherence-themed content into nurse onboarding, once-a-year competencies, and professional development courses guarantees sustainability and frequent skill acquisition.

### **Positive Social Change**

In this DNP project, I set a goal of increasing nurses' knowledge of medication adherence interventions through a structured module of education. By expanding nurses' knowledge, the project facilitates routine, knowledgeable, and patient-centered care, which are essential factors in health equity development. Expanded nurse knowledge of how to recognize barriers, such as medication cost, medication adverse effects, and health

literacy, facilitates equitable medication adherence support across a spectrum of outpatient populations.

### **Limitations**

The project took place at a single outpatient setting and involved a sample of 32 nurses, which limits generalizability. The questions from the pre- and posttests were not psychometrically tested.

### **Recommendations**

Based on the project results, I have recommendations to enhance organizational practice and sustainability. Integration of nurse education modules into annually refreshed competencies and new staff orientation will guarantee ongoing retention of knowledge, verification of best practice, and integration of support for adherence into practice for nurses. The project site organization should also escalate interdisciplinary practice, particularly with pharmacists and social workers, to mutually engage on common problems in adherence, such as cost, side effects, and complexity of treatment. Long-term outcomes should be monitored on a regular basis by consideration of long-term outcomes of adherence, such as medication possession ratios and 30-day readmissions.

### **Conclusions**

In this DNP project, I effectively bridged a significant practice gap by designing a structured module of education to strengthen outpatient nurses' knowledge about medication adherence techniques. The outcomes showed a quantifiable enhancement of nurse knowledge, exemplifying the importance of focused education for deepening

clinical expertise. The continued persistence and growth of this initiative across outpatient departments will promote routine, evidence-informed practice; encourage improved outcomes for patients' and benefit the enduring positive social transformation of healthcare practice.

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## Appendix A: Staff Education Material

### Improving Medication Adherence in Outpatient Settings

Nurse-Led Educational Module to Improve Staff Knowledge Presented by Catherine Omalawa

### OBJECTIVES

- EXPLAIN THE ROLE OF THE NURSE IN MEDICATION ADHERENCE
- DESCRIBE TOOLS USED TO MEASURE ADHERENCE AND EFFECTIVE INTERVENTIONS
- USE CLINICAL GUIDELINES FOR ADHERENCE
- IDENTIFY THE BARRIERS TO MEDICATION ADHERENCE
- SELECT SOURCES AND REFERRAL PATTERNS FOR MEDICATION ADHERENCE SUPPORT
- DISCUSS CONCEPTUAL FRAMEWORK FOR NURSE-LED ADHERENCE

### Overview: Medication Adherence and the Role of Nurse Education

Education adherence is a significant challenge in outpatient care, with up to 50% of patients with chronic conditions not following therapy regimens (World Health Organization, 2011). Factors influencing medication adherence include forgetfulness, poor health literacy, side effects, confusion, costs, and lack of perceived need. Nurse education plays a critical role in teaching patient behavior through targeted education and follow-up. Nurses can identify adherence barriers, apply evidence-based methods, provide patient-specific needs, and reinforce education via follow-up calls or voice messaging (Kawaguchi et al., 2012). Educational programs have been shown to increase knowledge, confidence, and clinical effectiveness in preventing adherence (Shaw et al., 2012). Provider involvement, patient support, and follow-up programs increase the sustainability of positive experiences.

### Overview: Medication Adherence and the Role of Nurse Education

Intentional vs. Unintentional Medication Non-Adherence

Unintentional medication non-adherence is often patient failure to adhere to treatment due to practical barriers or psychosocial challenges. Common causes include forgetfulness, physical or cognitive limitations, poor health literacy, complex medication regimens, financial hardship, and transportation issues (Ponirakis et al., 2012). Intentional medication non-adherence is often patient failure to adhere to the prescribed regimen due to beliefs, perceptions, or attitudes. Common causes include perceived side effects, no time to take pills, that the medication is unnecessary, cultural or religious beliefs, past negative experiences, self-confidence, lack of trust in the healthcare system, and the absence of self-efficacy (Kawaguchi et al., 2012). Nurses can take steps to address both types of non-adherence, with unintentional non-adherence often requiring education, simplification, and support, while intentional non-adherence may require motivational interviewing, shared decision-making, and harm

### Why is Medication Adherence Important?

Medication adherence is a critical factor in outcomes of chronic diseases like hypertension, diabetes, and heart failure. Non-adherers make up 50% of a population and cost \$125,000 per avoidable disease annually in the U.S., increasing hospital readmissions, disease progression, and health care costs (including \$1.06 billion) (Ranga et al., 2010).

### WHY IS IT IMPORTANT TO TAKE MEDICATIONS AS DIRECTED?

- improve survival
- decrease symptoms and improve quality of life
- decrease risk of complications
- slow progression of disease
- avoid hospitalizations
- prevent disease

TREATING YOUR MEDICATIONS AS DIRECTED = BETTER OUTCOMES

### TOOLS USED TO MEASURE ADHERENCE

- The Morisky Medication Adherence Scale (MMAS) is a widely used self-reported questionnaire for assessing a patient's adherence to prescribed medications. Developed by Dr. Donald E. Morisky, it helps providers identify behavioral patterns associated with non-adherence to prevent adverse health outcomes. It is applicable to patients with chronic conditions such as hypertension, diabetes, HIV, and asthma (Morisky et al., 2012).
- The Medication Possession Ratio (MPR) is a tool used to compare adherence to therapy. It is calculated as the number of days supply of medication divided by the number of days supply prescribed (Dose). Coverage (Cov) is the percentage of days supply of medication received divided by the total number of days supply. MPR is calculated as Cov divided by Dose (Farr et al., 2010).

### TOOLS USED TO MEASURE ADHERENCE

- ▶ The **Self-Validation Questionnaire (SVQ)** is a self-report tool used in outpatient settings to explore behavioral and belief-based factors. It identifies specific reasons for non-adherence for subjects to patient recall bias. Adherence items with knowledge (SVQ-17) is a 17-item questionnaire that assesses multiple adherence dimensions but requires testing and interpretation.
- ▶ **Real-World Adherence Measures via Electronic Health Records (RAM)** generate adherence reports using self-monitors and related appointments, which can be used to target patient coaching interventions (Hesse et al., 2022). **RF Cores** are simple and inexpensive tools used in outpatient settings to compare remaining pills with reported consumption. Electronic Monitoring Devices (EMD Cores) mark when a medication bottle is opened but are expensive and are widely available.
- ▶ In conclusion, no single tool is universally ideal, and a multimodal approach is recommended, combining pharmacy data, self-report tools, and technology-based monitoring. Nurses, pharmacists, and physicians must collaborate to tailor tools appropriate for the population, workflow, and clinical goals.

### SCORING, VALIDITY & RELIABILITY AND STRENGTH OF MMAS

- ▶ The **MMAS-8** is a validated adherence tool that has been validated in multiple chronic illness populations with acceptable internal consistency. It has measures of reliability and predicts e-ability in outcomes like clinical presentation. Also noted: The tool is optimized quick to administer, easy patient-friendly language, and can guide to guide education or intervention (Blevins et al., 2022).

However, this tool has needs as being self-reported, subject to social desirability bias, not assessing intention vs. unintentional non-adherence separately, and requiring licensing for use. It is not a substitute for education.

### CLINICAL GUIDELINES FOR ADHERENCE

- ▶ Medication adherence is a social aspect of chronic disease management, and the World Health Organization, American Heart Association, and National Institute for Health and Care Excellence endorse or are involved in guidelines. Key considerations include regular adherence assessments by using patient self-report tools like MMAS, pill counts, and self-monitors, integrating medication systems, involving patients in treatment planning, using patient-friendly strategies, leveraging technology-based tools, and referring to factors of health-related psychological factors and adherence (American Heart Association, 2022). Technology and follow-up support, such as which ones involve and patient portals, can also be used to improve adherence (World Health Organization, 2022). It is essential to measure adherence at each visit, especially post-discharge, to assess if there is a need for a medication review.

### CLINICAL GUIDELINES FOR ADHERENCE

A. World Health Organization (WHO) – *Guidelines on Promoting Therapeutic Adherence for Adults* (2008, revised 2022)

**Principal Recommendation:** Adherence is influenced by five dimensions: Socioeconomic, clinical context, Factors related to the healthcare system and the diagnosis, Factors associated to condition, Factors associated to therapy, Factors associated to the patient.

Healthcare providers should make multiple strategies to enhance adherence. Patient education is used but is not studied as a highly relevant. The consistency of care and consistent follow-up are essential. **Recommendation:** This guideline will create a medication management plan that includes adherence assessment, patient education, a medication system assessment, a plan to use both oral and an especially selected tool, particularly in outpatient settings where follow-up and patient response are not ideal. The **Medication Adherence Scale (MMAS)** is a self-administered questionnaire to evaluate patient's adherence with chronic conditions. It is among the most frequently utilized tools in clinical and research environments, recognized for its simplicity, dependability, and relevance to many chronic conditions (e.g., hypertension, diabetes, HIV, and asthma).

### CLINICAL GUIDELINES FOR ADHERENCE

B. American Diabetes Association (ADA) – *Standards of Medical Care in Diabetes (2024)*

**Goal for Enhancing Adherence:** Promoting an adherence management plan or support (EMAS). Emphasize the importance of patient engagement and continuous assessment. Recommended factors include systems, autonomy, and health literacy. Nurses serve as chief educators and mentors. Education for complex chronic care, such as diabetes, plays a role in increasing medication adherence, covering misconceptions, and solving interventions for safety systems with multiple considerations.

C. National Institute for Health and Care Research (NICE) – *Medication: Adherence (Supporting Patients in Decision Making Regarding Prescribed Medication and Tailoring Adherence)* (2018)

**Personalized Education:** Healthcare professionals should encourage patients to participate in medication decision-making. Patients should be frequently evaluated for adherence, particularly in the management of chronic diseases. Non-pharmaceutical strategies for managing adherence without time. Support more encompassing medication adherence in the... **RELEVANCE:** NICE emphasizes the importance of patient-centered communication, a fundamental competency in nursing. Nurses in outpatient settings use daily self-reporting techniques such as motivational interviewing and the teach-back approach to enhance intention and verify medication adherence.

### CLINICAL GUIDELINES FOR ADHERENCE

- ▶ **D. American Heart Association (AHA) – Guidelines for Hypertensive Management (2021) Adherence-Specific Recommendations:** Strategies to enhance e-ability encompass both inpatient and outpatient environments. Utilization of validated adherence tools, such as the MMAS, incorporated into verbal counseling and follow-up using electronic reminders of chronic care. **Behavioral Education:** Self-education of chronic disease-related conditions is integral to patient medication adherence. Nurses at outpatient offices are essential for doing follow-ups, coaching side effects, and solving or preventing adherence checks during routine visit-up assessments and medication reviews (Wheeler et al., 2021).

### Barriers to medication adherence

**Complexity:** many patients struggle to use their medication, leading to not using it at all (Chikara, 2019).

**Side effects:** when the patient notices the negative side effects, they stop taking the medication.

**Health literacy:** when the patient lacks health literacy, they do not understand the importance of taking the medicine, or they do not know how to take it (Lewinsohn, 2014, 2020).

**Cost of medication:** the price of medication makes patients not use their medication. Health insurance, health of insurance, and if it is covering, makes it help with cost management (Gardner, 2019, 2020).

**Complex regimen:** including medication in one case is the one most that when a day will result in adhering to medication use.

### Role of staff Nurses

- NURSES SERVE AS AN EDUCATOR AND ADVOCATE
- ASSESS PATIENT UNDERSTANDING AND BARRIERS
- PROVIDE CLEAR INSTRUCTIONS AND SUPPORT TOOLS
- REINFORCE WITH FOLLOW-UPS

### EFFECTIVE INTERVENTIONS

**TEACH-BACK METHOD**

**MEDICATION CALENDAR OR PILLBOX**

**PHONE CALL REMINDER**

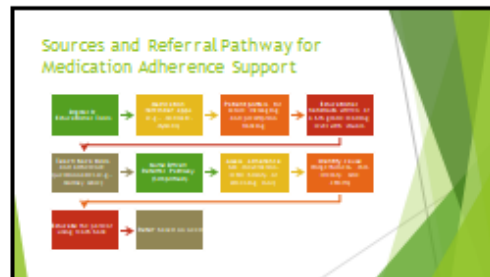
**MOTIVATIONAL INTERVIEWING**

**COLLABORATE WITH PHARMACISTS OR SOCIAL WORKERS**

**ASK PATIENTS TO REPEAT INSTRUCTIONS FOR THE PRESCRIPTION**

**CONFIRM UNDERSTANDING**

**NURSE-LED ACTION**



### CONCEPTUAL FRAMEWORK FOR NURSE-LED ADHERENCE INTERVENTIONS

- The Health Belief Model (HBM) aids in understanding and predicting the impact of individual beliefs on health behaviors, particularly medication adherence, and is crucial for patient education and behavior-change counseling (Bennett et al., 2021).
- Nurses can benefit from individualized interventions that focus on beliefs, attitudes, and self-management, which can be readily assessed during routine visits and can be used with personal post-teaching strategies.

### CONCEPTUAL FRAMEWORK FOR NURSE-LED ADHERENCE INTERVENTIONS

Component	Definition	Nursing Application
Perceived Acceptability	Belief about risk of illness	Discuss the risk of complications, their own adherence (e.g., under hypertension)
Perceived Severity	Belief about seriousness of the condition	Use real life stories to enhance the perceived severity of untreated chronic illness
Perceived Benefits	Belief about efficacy of the medication	Highlight how adherence improves quality of life and prevents hospitalizations
Perceived Barriers	Belief about own side effects, cost, effort	Identify and help patients overcome specific obstacles (e.g., simplify dosing or explore cost-saving options)
Self-Efficacy	Confidence in ability to make needed changes	Use self-assessment, phone calls, and follow-up calls to reinforce
Self-Motivation	Confidence in ability to make needed changes	Track, document, and address common medication mistakes with the patient

### Case Study: Mrs. Jackson - Addressing Medication Adherence in an Older Adult

Mrs. Jackson, a 63-year-old female with hypertension and type 2 diabetes, was seen in the outpatient clinic for a routine follow-up. During the visit, the nurse noticed her blood pressure and blood glucose levels were consistently above target. Upon review, Mrs. Jackson admitted to missing several doses of her medications each week due to a busy schedule and uncertainty about their importance. The nurse provided patient-centered education, explaining how her medications work to prevent complications like stroke, heart attack, and kidney damage. A simplified medication schedule was created with color-coded bottles, and a pill organizer and phone reminder system were introduced. Mrs. Jackson also received printed materials and was encouraged to involve family members for support. One her next visit, she reported improved adherence and understanding, with better clinical outcomes.

### SUMMARY

This educational module explains the critical role of caregiver status in improving medication adherence among older adults with chronic conditions using an educational module. Non-adherence, both intentional and unintentional, remains a major healthcare challenge linked to poor outcomes and increased costs. The module outlines key teaching objectives, including understanding barriers to adherence, applying clinical guidelines, and utilizing validated measurement tools like the Morisky Medication Adherence Scale (MMAS-8). Nurses can implement through evidence-based strategies such as patient education, motivational interviewing, simplified regimens, and regular follow-ups. Clinical guidelines from WHO, NICE, ADA, and IHI outline the importance of structured assessments, patient-centered communication, and interdisciplinary collaboration. The Health Belief Model is presented as a guiding framework for tailoring interventions based on patient beliefs and behaviors. A case study of an older adult patient illustrates how nurse-led strategies can effectively increase adherence. Ultimately, the module calls for sustained nurse engagement to promote better medication management and health outcomes, one patient at a time.

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## Appendix B: Pre- and Posttest

### Pre- and Post-Education Questionnaire

Audience: *Outpatient Clinic Nurses*

Purpose: To assess knowledge before and after nurse education.

Instructions:

Please choose the best answer for each of the following multiple-choice questions. Only one answer per question is correct.

1. What is the definition of medication adherence?
  - A. Taking all medications at the same time every day
  - B. Picking up prescriptions from the pharmacy
  - C. Following prescribed medication timing, dose, and frequency
  - D. Taking medications only when symptoms appear
  
2. What is the most frequently reported barrier to medication adherence in outpatient care?
  - A. Language barrier
  - B. Forgetfulness
  - C. Polypharmacy
  - D. Clinic wait times
  
3. Which of the following is an evidence-based strategy nurses can use to improve adherence?
  - A. Reading the prescription aloud to the patient
  - B. Asking the patient to watch a video
  - C. Using the teach-back method to verify understanding
  - D. Sending patients home with their medication bottles
  
4. What should a nurse do when a patient reports missing medication doses due to confusion about timing?
  - A. Refer the patient to a physician
  - B. Reinforce education and provide a medication calendar or visual aid
  - C. Stop the medication until the provider is available
  - D. Tell the patient to follow the label on the bottle

5. What role do nurses play in supporting outpatient medication adherence?
- A. Diagnosing and changing medications
  - B. Monitoring adherence and educating patients with supportive strategies
  - C. Dispensing medications at discharge
  - D. Deciding which medications are essential
6. Which of the following tools is commonly used to measure adherence in clinical practice?
- A. Morisky Medication Adherence Scale (MMAS)
  - B. Mini-Mental Status Exam
  - C. Braden Pressure Ulcer Scale
  - D. Glasgow Coma Scale
7. Which of the following would be considered a multi-component adherence intervention?
- A. Handing out printed instructions
  - B. A reminder text message only
  - C. Nurse education and follow-up calls
  - D. Asking patients if they are taking medications
8. How can medication adherence education improve chronic disease outcomes?
- A. By reducing blood levels of medications
  - B. By decreasing the frequency of follow-up visits
  - C. By improving disease control and preventing complications
  - D. By encouraging patients to self-adjust medications
9. What is the most common reason for medication non-adherence in older adults?
- A. Side effects
  - B. Cost of medication
  - C. Forgetfulness
  - D. Fear of dependence
10. Which of the following is an example of an *unintentional* adherence barrier?
- A. Belief that medication is harmful
  - B. Choosing to stop due to media reports
  - C. Forgetting due to memory issues
  - D. Distrust in providers

11. What is the purpose of using the Morisky Medication Adherence Scale (MMAS-8)?
- A. To diagnose illness
  - B. To assess patient health literacy
  - C. To measure self-reported medication adherence
  - D. To track adverse drug reactions
12. Which model is commonly used to guide adherence-related interventions by nurses?
- A. Maslow's Hierarchy of Needs
  - B. Health Belief Model
  - C. Lewin's Change Model
  - D. Social Cognitive Theory

#### Answer Key

- 1. C
- 2. B
- 3. C
- 4. B
- 5. B
- 6. A
- 7. C
- 8. C
- 9. C
- 10. C
- 11. C
- 12. B

#### Scoring Recommendation:

- Total Points: 12
- Using the same quiz pre- and post-training to assess knowledge gain.