Improving Patient Care: A Focus on Adherence

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Target Audience
This continuing education activity was designed specifically for pharmacists.

Disclosure Statement
The author has indicated that she does not have any conflicts of interest, nor does she have financial relationships with a commercial interest, related to this activity.

Learning Objectives
At the end of this activity, participants should be able to:

- recognize appropriate terminology for adherence.
- describe the five dimensions that influence adherence, as identified by the World Health Organization (WHO).
- identify the "Ten Priorities for Action," as outlined by the National Council on Patient Information (NCPIE).
- discuss pharmacy-specific interventions to improve adherence.

"*Drugs don't work in patients who don't take them.*" – C. Everett Koop, MD, 13th Surgeon General of the United States

Nonadherence to therapy for chronic illnesses in developed countries is estimated at 50 percent, and the rates in developing countries are even higher. In the United States, less than 2 percent of patients with diabetes perform the full level of care recommended by the American Diabetes Association.[1] Data from several countries reveal that less than 25 percent of patients with hypertension achieve optimum blood pressure and as low as 30 percent of patients with asthma are adherent to therapy.[1] A survey conducted by the National Community Pharmacists Association (NCPA)in 2006 found that 49 percent of patients forget to take their medication, 31 percent did not fill a prescription they were given, 29 percent stopped taking a medication before their supply ran out and 24 percent took less than the recommended dosage.[2]

Efforts to improve adherence, even through methods as simple as education, have been minimal and fragmented. The Food and Drug Administration (FDA) conducted a telephone survey in 2004 and found only 66 percent of patients reported being told how often to take their medication by their physician, and only 64 percent reported being told how much to take. The information provided by the pharmacy was even worse, with only 31 percent of patients reported being told how often to take their medication, and 29 percent being told how much medication to take.[2] These results highlight the need for dramatic improvement.

The consequences of nonadherence are significant, including poor health outcomes (disease progression, development of complications, reduced quality of life, increased mortality), higher health care costs (increased utilization of health services, wasted health care resources) and safety risks (dependence, rebound/withdrawal effects, increased resistance to therapy and increased toxicities or side events).[1,2]

Terminology

Words used to define patient medication-taking behavior have changed with time. Historically, "compliance" was the term of choice, but more recently the labels "persistence," "concordance" and "adherence" have emerged in the literature. Compliance implies cooperation or

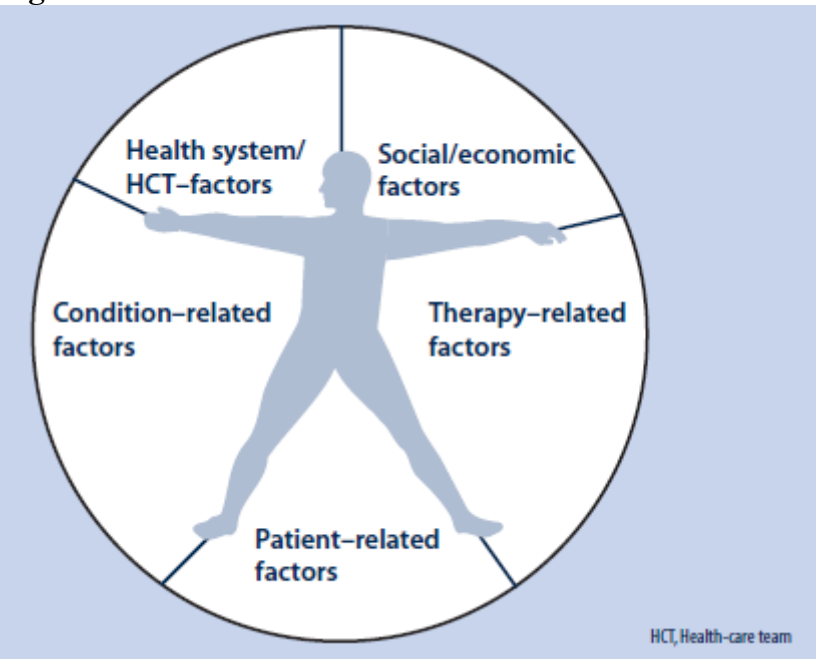
obedience, suggesting a passive patient role where providers give instructions and patients are expected to follow them. Compliance incorrectly places the full blame of nonadherence on the patient. Not surprisingly, this term has fallen out of favor.[1,2]

Persistence is defined as continuing to take a medication for the duration prescribed, which has limited the scope for discussing a full spectrum of medication-taking behaviors. Concordance, a term used mainly in Europe, focuses on the relationship between the patient and provider with each having an equal role in decision-making.[2,3] Adherence is defined as "the extent to which a person's behavior corresponds with agreed recommendations from a health care provider."[1] Adherence, like concordance, emphasizes collaboration between the patient and caregiver, because the patient must agree with the recommendations made by the health care professional. This term has been adopted by the National Council on Patient Information and Education (NCPIE) and the World Health Organization (WHO) and, therefore, will be used throughout discussion in the remainder of this document.[1,2]

Barriers to Adherence: The Five Dimensions

Nonadherence affects all disease states and all demographic and socioeconomic strata. Contrary to what some health care professionals believe, nonadherence is just as likely to involve higher-income, well-educated patients as those with lower socioeconomic status.[2] Nonadherence is influenced by many factors, and the WHO has categorized these factors into five broad dimensions (see Figure 1).[1]

Figure 1. Five Dimensions of Nonadherence[1]



Social and Economic Dimension

Possible social and/or economic barriers to adherence are age, socioeconomic status, poverty, illiteracy, low level of education, unemployment, lack of social support networks, unstable living conditions, long distance from treatment centers, cultural beliefs about illness and treatment, and family dysfunction.[1] Again, socioeconomic status and income have not been found to be independent predictors of adherence, but can place patients in the difficult position of choosing between priorities. Nonadherence affects all age groups, however, older patients may be at higher risk due to cognitive and functional impairments that develop with aging.[1,2]

Health-System Dimension

Problems with the current health care system can overwhelm both providers and patients. Examples include overworked providers, short consultations, poor continuity of care, poor communication style of providers, poor patient-provider relationship, inadequate or lack of reimbursement by health insurance, poor medication distribution systems, lack of incentives and feedback on performance, weak system capacity for patient education and follow-up, and lack of provider knowledge of adherence.[1] These factors have not been studied extensively but they can obviously limit time spent with patients, reduce the capacity to address adherence and reduce overall quality of care.

Therapy Dimension

These factors may also be the most familiar to pharmacists, as they address the complexity of the medication regimen. Frequency of doses, administration techniques, duration of treatment, frequent changes in treatment, side effects and cost have all been shown to influence adherence to varying degrees. Of these, the two major barriers identified are frequent dosing and experiencing side effects.[1]

Condition Dimension

The burden of disease can be another major barrier to adherence. Factors include severity of symptoms, level of disability (physical, psychological, social and vocational), rate of progression, availability of effective treatments and the complexity of managing the disease. Co-morbidities like hypertension, obesity and depression are associated with nonadherence and can increase the risk of negative outcomes.[1]

Patient Dimension

This dimension is not yet fully understood, but is comprised of patient resources, knowledge, attitudes, beliefs and expectations of treatment. Examples of barriers are forgetfulness, stress, anxiety about side effects, low motivation, inadequate knowledge, lack of skills in self-management, lack of perceived need for treatment, lack of perceived effect of treatment, negative beliefs about treatment, misunderstanding or non-acceptance of disease, lack of perception of disease risk, misunderstanding treatment instructions, feelings of hopelessness, and frustration or distrust in health care providers or the health care system. Major barriers identified include lack of information, lack of skills for self-management, difficulty with motivation and lack of support for behavioral changes.[1]

STOP AND REFLECT

MM, a 76-year-old female, presents to your clinic today for a follow-up on her diabetes management. She has a past medical history of hypertension, heart failure, chronic kidney disease, glaucoma, osteoporosis and osteoarthritis. Her current medication list includes acetaminophen, alendronate, aspirin, carvedilol, metformin, insulin glargine, insulin aspart, lisinopril, ferrous sulfate, timolol eye drops and naproxen. During discussion, she admits that she has not been taking her insulin regularly since she has been occupied with helping her daughter take care of her grandchildren. She states that she is not worried about her rise in blood glucose because she "feels alright." What risk factors for nonadherence can you identify in this patient?

Suggested Solutions Related to the Five Dimensions

"*Effective treatment for chronic conditions requires a transfer of health care away from a system that is focused on episodic care in response to acute illness towards a system that is proactive and emphasizes health throughout a lifetime.*" – WHO

With so many factors in play, adherence interventions that focus on a single barrier will have limited effectiveness. Interventions should therefore encompass as many factors as possible, and addressing all issues requires a strong, multi-disciplinary approach involving health care professionals, researchers and policy-makers. Some suggestions for interventions targeting the five dimensions are further outlined below.

Social and Economic Interventions

- Address poverty, access to health care, illiteracy and social support networks
    - Concerns must be brought to the attention of and addressed by policy-makers
- Create a system that is sensitive to cultural beliefs about illness and treatment
    - Respect cultural differences; be positive and supporting
    - Determine individual preferences
    - Try to understand the illness from the patient's point of view
    - Ask about "nontraditional" therapies
    - Accept that patients may decline medical treatment
- Identify and educate patients with low health literacy (see "Ten Priorities for Action")
- Involve family and community to engage and support patients
    - Peer/community support groups have many benefits:
        - Promote exchange of experiences
        - Provide medical information
        - Promote patient responsibility for their own care

Health-System Interventions

- Change the system to meet needs; this requires a multidisciplinary approach!
- Push for affordable prices and reliable supply systems
- Increase awareness of adherence (patients and providers)
- Implement adherence training for all health care professionals
    - Training should include:
        - Information on factors influencing adherence
        - Assessment tools and strategies to promote adherence
            - Tools for assessing adherence, medication knowledge, readiness to change and more are available at www.adultmeducation.com/AssessmentTools.html
        - Behavioral tools for creating/maintaining health habits
            - A starting point could include some of the "Behavior Change Tools" or "Wellness Worksheets" found at http://highered.mcgraw-hill.com/sites/0072972351/student_view0/
            - Explanation of the Transtheoretical Model of Behavior Change and other resources can be found at www.umbc.edu/psyc/habits/content/the_model/
    - Role-play scenarios to ensure proper incorporation of adherence tools in daily practice
- Create an "adherence counseling toolkit"

    - Include methods/tools to:
        - Assess adherence
        - Suggest interventions to improve adherence
        - Follow-up on adherence
- Improve the patient-provider relationship
    - Expand communication skills of providers
    - Offer clear and effective education
    - Avoid excess medical terminology
    - Use constructive and non-judgmental discussion
- Change payment systems to enhance reimbursement for education
- Improve continuity of care

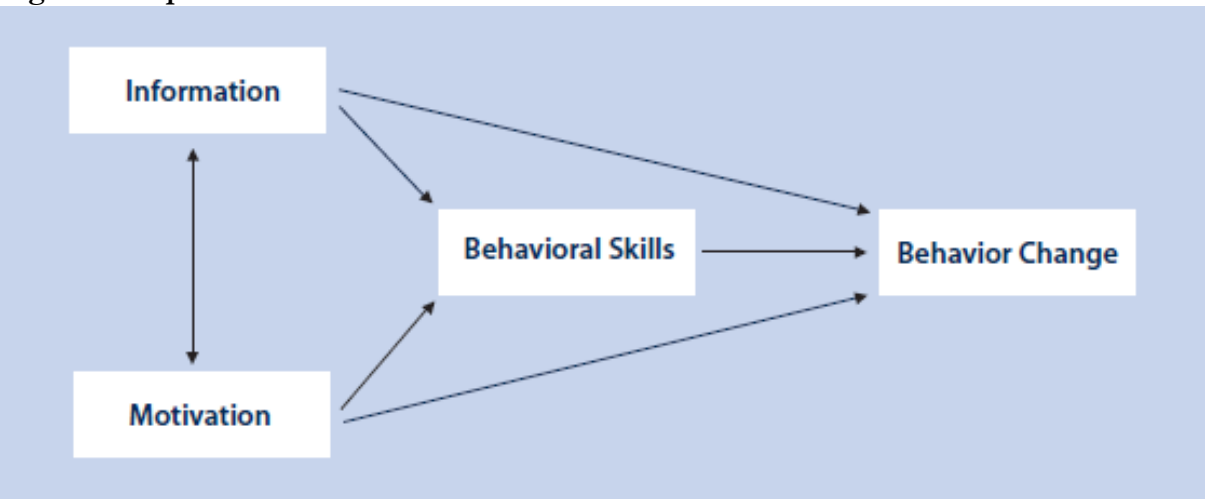
Therapy Interventions

- Educate patients on medication use, benefits and risks
- Simplify medication regimens
- Address side effects promptly
- Monitor and re-assess treatment

Condition Interventions

- Educate the patient on the disease at diagnosis and on follow-up encounters
- Identify and treat the complications of disease
- Identify and treat co-morbidities
    - Consider depression screening as part of adherence interventions
- Provide support for behavioral change
    - The information-motivation-behavioral skills (IMB) model (see Figure 2) is a simple guide to thinking about complex health behaviors[1]
        - Illustrates the need for information, motivation and behavior skills to be present before behavior change can happen

Figure 2. Representation of the IMB model[1]



Patient Interventions

- Utilize patient-specific interventions
  - There is no single strategy that can help all patients in all settings
  - Approach each patient individually
- Recognize that education alone is a weak intervention
  - Patients need to be informed, motivated and skilled (IMB model)
- Assess patient readiness/motivation
  - Do not assume patients are motivated or ready to "follow orders"
  - Ask open-ended questions
  - Utilize motivational interviewing techniques
- Follow-up on patient progress on every contact
  - Continue to encourage and support improvement

Ten Priorities for Action

The NCPIE has recognized adherence as a growing problem, and they have published a blueprint for action to address the issue.[2] Part of this blueprint is ten major steps that can be readily applied to current practice:

1. Elevate adherence as a critical issue
   a. Adherence has not been a priority for policy-makers and health professionals, resulting in inconsistent polices and lack of resources
2. Agree on standard terminology to unite stakeholders
   a. "Adherence" is preferred
3. Mount a national education campaign to make patient adherence a national health priority
   a. Must reach public and professional audiences on a sustained basis
   b. Need a national clearinghouse
4. Establish a multidisciplinary approach to adherence education and management
   a. Promote a "Medication Education Team" – patient and health care team work together, recognizing the patient's key role in the process
5. Implement professional training and increase funding for professional education on adherence
   a. Practitioners need hands-on information for the real-world setting
   b. Professional societies can provide training in continuing education courses and lecture series
6. Address barriers to adherence in patients with low health literacy
   a. Implement widespread adoption of tools like Rapid Estimate of Adult Literacy in Medicine Revised (REALM-R), validated pictograms to convey medication instructions, and education programs that promote and validate effective oral communication between providers and patients
7. Create the means to share information on best practices in adherence education and management
   a. National Institutes of Health (NIH) Adherence Research Network must collect, quantify and share data on:
      i. Assessment of patient readiness
      ii. Medication management and adherence interventions
      iii. Incentives that produce quality outcomes
      iv. Measurement tools
8. Develop a curriculum on medication adherence for use in health care schools and institutions

    a. Focus on adherence advancement and medication-related problem-solving
    b. Mandate coursework in this area
9. Seek regulatory changes to remove roadblocks for adherence assistance programs
    a. Clarify that education and refill reminder communications fall within the scope of the federal anti-kickback statute
    b. Ensure federal and state laws related to patient privacy and use of prescription data do not limit pharmacist ability to communicate with patients
10. Increase federal budget and stimulate rigorous research on medication adherence
    a. Advocate for NIH Adherence Research Network to increase research funding

These ten steps are in varying stages of development. NCPIE encourages immediate action, and starting on these large-scale projects can help the system as a whole. For more information and resources, visit their Web site at www.talkaboutrx.org.

Pharmacy-Related Problems

Pharmacy, as part of the health-system, presents several of its own barriers to adherence. Among these are patient and pharmacist attitudes, knowledge level of pharmacists, operational aspects of pharmacy practice and professional barriers.[2]

Attitudes and Knowledge

Patients may not value the profession of pharmacy. Many patients do not understand the role of a pharmacist in their care or do not realize the level of education and expertise pharmacists can provide. Some patients assume that pharmacists are too busy to spend time with them or answer their questions. Pharmacists can be part of the problem if they make no attempt to interact with patients or have little knowledge of adherence concepts.

Operational Aspects of Practice

The pharmacy system represents a significant constraint, which is especially noticeable in community practice. Lack of time, resources, staff and management support can prevent pharmacists from spending time with patients. Issues with reimbursement add to the problem, with little to no incentive for educational endeavors and thousands of pharmacy hours spent on the phone with insurance companies to clarify coverage information or rejections.

Professional

There is a considerable lack of consensus regarding pharmacists' role in health care. This concept is reflected by lack of consistent recognition of pharmacists as providers and slow, disjointed progress toward clinical pharmacy. Some pharmacists are even resistant to the ideas of changing practice.

Pharmacy Solutions

Pharmacists are considered one of the most accessible health care professionals, and as medication experts are ideally placed to inspire and monitor medication adherence behaviors. Pharmacists should have the opportunity to educate, answer questions, address concerns and promote adherence on a regular basis. Pharmacists can encourage rational drug selection, ensuring that medication therapy is available, affordable, simplified and accepted by the patient. Pharmacists are also major players in resolving adverse drug reactions and monitoring drug therapy.

Increasing Awareness and Training

The first step is adherence education for all health care professionals, including pharmacists. Adherence training should be incorporated in college courses and continuing education (CE) for

pharmacists, as recommended by NCPIE. Adherence training should include communication skills, consultation methods and problem-solving. Some universities have already begun to offer lectures on these topics, and professional organizations have CE topics related to adherence.

Patients need to be aware of the importance of their pharmacist. Local and national public education efforts should attempt to address this issue. One example is the "That's My Pharmacist" campaign developed by the Michigan Pharmacists Association (MPA) and the Michigan Society of Health-System Pharmacists (MSHP), which encourages patients to get to know their local pharmacist. For more information on the campaign, please visit www.ThatsMyPharmacist.com.

Pharmacists should offer patient consultation as much as possible. As patients directly experience the benefits of working with their pharmacist, they will begin to appreciate the value of the profession.

Patient Education

Pharmacists must utilize education to the fullest. Pharmacists can help create a positive attitude by emphasizing benefits of therapy, which can reinforce the benefits of adherence and the consequences of nonadherence. Some brief guidelines on patient education are outlined in Table 1 below.

Table 1. Tips for Patient Education[2]

Use verbal discussion	Explain both benefits and risks Talk about what to do if side effects occur Have the patient state back key instructions Encourage the patient to ask questions and share information "Show and tell" any complex technique, like inhaler or injection use
Provide supplemental written material (not a substitute for oral discussion!)	Use patient language (6th grade level) Lists and pictures are helpful Include, at minimum, the following topics: • How to administer • Time to take and why • How long to take • Steps to recognize and manage side effects • Special precautions • How to monitor progress
Make patients aware of adherence aids	Dosing card Medication calendar Dosing reminders Pill boxes Refill reminder programs (call, text message or e-mail)
Instruct patients and caregivers on home monitoring aids	Blood pressure cuffs Blood glucose meters

Remember that patients are in charge of their own health and they are ultimately in control of their behavior. Pharmacists should work to provide knowledge and motivation, not to persuade or coerce. Approach each patient individually when considering adherence interventions. When patient resistance is noted, ask questions to better understand the problem before suggesting a solution. Patients are not likely to listen to information they have already heard or do not want to

hear. Motivational interviewing techniques and open-ended questions can help stimulate discussion and identify problems. See Table 2 below for some examples of motivational interviewing.

Table 2. Motivational Interviewing

Starting a conversation	What can I tell you about this medication? What do you think are the benefits of using this medication?
I don't know if I can take this medication.	What worries you about taking this medication? What would make you feel more confident?
I don't like taking medication.	What bothers you the most about it?
My medication costs too much.	What do you think would help you afford your medication? May I offer suggestions?
Sometimes I forget to take my pills.	How do you think missed doses will affect your goals?

Monitoring Therapy and Adherence

Follow-up is a necessity. Pharmacists can detect side effects and provide recommendations for patients. Pharmacists can also offer encouragement and reinforcement along the way, and develop relationships with each patient. The more patients trust their pharmacist, the more they are willing to have open discussions about adherence. If time is limited, start by targeting patients that show signs of nonadherence:

- Community: ask about adherence if patients are not getting refills on time
- Ambulatory care: ask about adherence if patients are not controlled by the recommended drug therapy
- Hospital: ask about adherence if patients are readmitted frequently

Operational Aspects of Practice and Professional Change

Pharmacists must have appropriately trained support staff wherever they practice. Technician licensure, enhanced technician training and increased technician responsibilities can remove pharmacists from dispensing activities and open more time for direct patient care. Some states have regulations on the employment of pharmacist assistants to provide help with nonclinical tasks like insurance clarifications.

Pharmacists should collaborate with management to redesign their facilities for optimal patient contact. In a hospital, this may be encouraging pharmacist presence in the units to be directly available for questions. In the community, this could be creating a private patient consultation area.

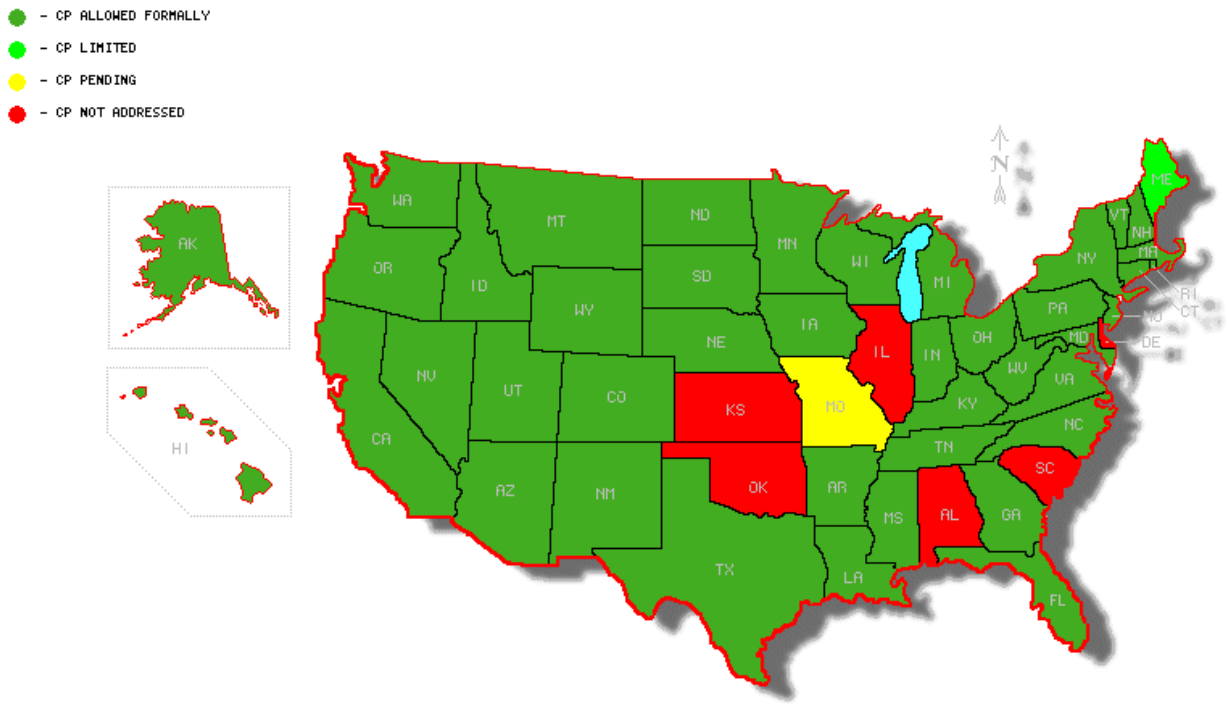
Insurance companies need to be encouraged to provide reimbursement for cognitive aspects of pharmacy, including education, medication management and adherence intervention activities. There is a multitude of data showing that pharmacist care improves outcomes, yet lack of reimbursement remains a problem. As a starting point, pharmacists must be consistently recognized as health care providers through legislation and policy.

President Obama has created the Patient Protection and Affordable Care Act, which includes grants and contracts specifically for implementing pharmacist-provided medication therapy

management (MTM) services, and required annual comprehensive medication reviews for Medicare Part D patients.[4]

Most states now have laws for collaborative drug therapy management (CDTM), encouraging pharmacists and physicians to work together to manage therapy. The 2011 Report to the U.S. Surgeon General includes a map indication where regulatory authority for pharmacist-physician collaboration exists (see Figure 3).[5]

Figure 3. United States Collaborative Practice (CP) Map[5]



Through collaborative practice, pharmacists can:

- Perform patient assessment (collect subjective/objective data)
- Have prescriptive authority to manage disease
- Order, interpret and monitor laboratory tests
- Formulate clinical assessments and develop therapeutic plans
- Provide care coordination for wellness/prevention
- Develop partnerships with patients for follow-up care[5]

Pharmacists around the country have already stepped into patient care roles. National organizations have adopted the idea of "pharmaceutical care," which promotes the clinical profession and collaboration with other professionals for therapy management.[2] The profession is constantly changing, and all pharmacists must adapt.

STOP AND REFLECT

You are working in a busy community pharmacy. SN, a 52-year-old male, presents to the pharmacy for refills on his atorvastatin. In scanning his profile, you notice that he has been over a week late on refills for the past few months. When you bring up the issue, he responds with "I'm getting sick of taking this medicine." How would you approach this situation? What would you do if the patient told you that he has been having muscle cramps?

Conclusions

Adherence is a continuing problem that has not yet become a top health care priority, and awareness and training are lacking. Consequently, nonadherence remains a large barrier to patient care. Legislators, health care professionals and researchers at local and national levels must be proactive to elicit meaningful, lasting system changes. Health care professionals must take the time to understand, assess and intervene on adherence issues in their patients. As the most accessible health care professional and the medication expert, pharmacists are ideally positioned to take the lead on promoting medication understanding and adherence in their daily practice.

Continuing Education Self-assessment Questions

1. Compliance is defined as continuing to take a medication for the duration prescribed.
   a. True
   b. False

2. Which term is the most appropriate for defining medication-taking behavior?
   a. Compliance
   b. Persistence
   c. Adherence
   d. Concordance

3. Which factor has not been independently identified as a barrier to adherence?
   a. Illiteracy
   b. Experiencing side effects
   c. Income
   d. Low motivation

4. Which of the following is a health-system-related factor?
   a. Lack of social support networks
   b. Lack of skills in self-management
   c. Level of disability
   d. Poor patient-provider relationship

5. Select the appropriate dimension-solution match:
   a. Social and economic-related: promote support groups
   b. Health system-related: simplify medication regimens
   c. Patient-related: identify and treat co-morbidities
   d. Therapy-related: assess patient readiness/motivation

6. Which of the following is not one of the ten priorities for action identified by NCPIE?
   a. Educate patients on medications
   b. Address barriers in low health literacy
   c. Elevate adherence as a critical issue
   d. Agree on standard terminology

7. Pharmacist attitudes are one of the barriers to improving adherence.
   a. True
   b. False

8. Which is a step toward improving adherence from a pharmacy perspective?
    a. Quicker patient consultation
    b. Pharmacist training in adherence
    c. Lack of consensus on pharmacy roles in health care
    d. Issues with reimbursement

9. A dosing card is a good example of an adherence aid.
    a. True
    b. False

10. In the end, who is in control of patient behaviors?
    a. The pharmacist
    b. The physician
    c. The patient's mother
    d. The patient

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