ABSTRACT

Medication nonadherence is a significant barrier to effective long-term treatment of HIV and other chronic illnesses. Adherence to HIV medications often declines after the first few months of treatment, and clinicians are generally unable to predict which patients are most likely to have adherence problems. Although many studies have shown that a variety of interventions improve adherence and other clinical outcomes in patients with HIV infection, the magnitude of improvement is generally small, and the interventions are rarely simple to administer. Suggested approaches to improving adherence rely on concepts such as patient-centered care, adult learning theory, and motivational interviewing. Patient-centered care, which emphasizes the patient’s unique values and needs, has been increasingly recognized as an important contributor to long-term treatment adherence. Understanding the basic principles by which adults learn new information is especially important when communicating with older patients, many of whom have accumulated experience with and expectations about medical care over a period of decades. Motivational interviewing emphasizes patient discussions that are nonjudgmental, nonconfrontational, and nonadversarial. Improving adherence is a skill that requires both understanding the reasons for poor adherence and applying strategies to help patients overcome adherence barriers. Nonadherence may be voluntary (ie, patients may choose not to use their medication as prescribed), or it may be involuntary (ie, patients may wish to use their medication as prescribed, but forget or are otherwise prevented from doing so). Obtaining a thorough history is essential to understand the underlying causes of adherence problems. Conversational techniques such as reflective listening, understanding ambivalence, and assessing patient understanding can help patients to find their own reasons for remaining adherent to antiretroviral therapy.


Medication nonadherence is an endemic problem that significantly increases the likelihood of poor health outcomes in patients with chronic illnesses. Despite the introduction of a growing number of once-daily medications and other technologic innovations, nonadherence remains a significant problem in HIV care. Poor medication adherence complicates HIV treatment by increasing the need for office visits, tests, and the use of other healthcare resources, all of which ultimately increase the cost of care. In the United States, it has been estimated that 30% to 60% of hospitalizations may be related to poor medication adherence,¹ and that adherence-related healthcare costs total between $170 and $290 billion per year.² Medication adherence is often a significant problem even for patients who are using medications with few adverse effects (eg, statins for elevated cholesterol) or for potentially life-threatening conditions such as cancer.³⁻⁵ In a recent
meta-analysis that examined long-term adherence in patients with HIV, adherence rates were approximately 85% to 90% for most patients early in the course of antiretroviral therapy (ART), but declined to approximately 70% to 75% after 1 year.6,7 In addition, many studies have demonstrated that clinicians cannot accurately predict which patients remain adherent to therapy and which are likely to have significant adherence problems.8,9

It is possible, although not easy, to improve adherence with prescription medications. A recent meta-analysis summarized results from randomized clinical trials that have examined the effectiveness of several different interventions to improve treatment adherence across all medical problems.10 Four of 10 short-term interventions were associated with improvements in both treatment adherence and at least 1 clinical outcome, and an additional intervention improved adherence but did not significantly improve clinical end points. For long-term interventions, this review found that 36 of 81 interventions studied were associated with improvements in adherence, and 25 of the interventions also resulted in better clinical outcomes. Almost all of the effective interventions were complex, and even the best did not result in large improvements in adherence or in clinical end points. In another recent meta-analysis of 4810 patients from 48 clinical trials that looked specifically at interventions for patients with HIV taking antiretroviral medications, the odds ratio (OR) for achieving 95% adherence was significantly greater for patients randomized to adherence interventions than to control groups (OR = 1.66, 95% confidence interval = 1.54–1.78).11 Although these data show that it is possible to improve adherence in patients with HIV, the authors of another recent review of various strategies to promote adherence concluded that although there are many effective methods to improve adherence, the effects are generally relatively small and transient.12

**Identifying Barriers to Adherence**

Some of the most effective interventions to improve adherence rely on the use of patient-centered care, adult learning theory, and motivational interviewing. Patient-centered care has been defined as “providing care that is respectful of and responsive to individual patient preferences, needs, and values, and ensuring that patient values guide all clinical deci-

sions.”13 Adult learning theory refers to a set of education strategies to tailor learning experiences to the unique education needs and competencies of adults, rather than young children. Childhood education is usually based on the concept of pedagogy (ie, “child-leading”), an education approach in which a teacher decides what to learn, how and when to learn it, and when it has been learned. In contrast, andragogy (ie, “man-leading”) is an approach to education in which learners learn when they need to know something. In this model, learners are viewed as autonomous and self-directing, and they are likely to resent and resist others telling them what to learn. Andragogy also emphasizes the prior experience of the learner, and the mental models that learners construct to explain their experiences. Understanding adult learning principles is especially important when communicating with older patients. Many of these individuals have been using some form of medical treatment for 20 to 30 years or more, and they have constructed mental models to account for their illness and the effects of treatment. Finally, motivational interviewing is a client-centered, directive method for enhancing intrinsic motivation to change by exploring and resolving ambivalence. Motivational interviewing emphasizes patient discussions that are conducted in a nonjudgmental, nonconfrontational, and nonadversarial manner.

Improving treatment adherence is a skill that involves both diagnosing the reason for poor adherence and helping patients to overcome adherence barriers. When evaluating reasons for nonadherence, it is often useful to distinguish between voluntary and involuntary nonadherence. Voluntary nonadherence refers to patients who have chosen not to use their medication as prescribed. Patients choose nonadherence for many different reasons; they may be unconvinced that the medication is needed or that it is working, they may experience adverse effects, they may feel stigmatized by the diagnosis or the treatment, they may be aware of negative press reports about the medication (eg, rofecoxib and rosiglitazone), they may believe that they are already taking too many medications, they may simply dislike taking medications, or they may be confused about the importance of the medication in their treatment plan. Involuntary adherence occurs when patients believe the medication is effective and they wish to use it as prescribed, but they experience barriers that prevent them taking the medication. Some potential sources of involuntary
nonadherence include forgetting to take the medication or to obtain refills, having an irregular schedule, demands of working or childcare, other problems with personal organization, or problems paying for the medication. It is also essential to understand that patients often think about each of their individual medications differently. Patients may construct complex narratives about the reason for each medication in the regimen, how and when it should be administered, its importance relative to other medications, and the adverse events that are associated with each medication. These narratives may combine in complex ways, and there are often many different reasons for the patient’s nonadherence to the variety of drugs that he or she is taking.

Obtaining a good history is essential to understanding the many potential causes of adherence problems for an individual patient. An accurate history only can be obtained by listening, and patients will only be truthful with their providers if they want to be. Patients are less likely to be truthful when they feel that their answers may be used against them. Listening, learning about the patient, and understanding their experiences and perspective are all essential in helping patients to change problem behaviors, including problems with adherence. Simply asking patients how they believe their medications are working can lead a conversation in directions that may illuminate potential causes of poor adherence. When talking with patients about their medication use patterns, an effective mindset is that of 2 people who are sitting down together to explore a common interest (eg, looking at photographs from a family vacation). Some typical provider-patient styles of communication are less likely to identify adherence obstacles, including an overly judgmental or confrontational approach.

**OVERCOMING ADHERENCE BARRIERS**

In the traditional medical model in which most physicians have been trained, the patient comes to the physician for answers and expertise. The physician provides this expertise, and it is up to the patient to apply the information or recommended treatment. In contrast, the behavior change model emphasizes finding answers that lie within the patient, a process that requires careful listening and understanding the patient’s experiences and perspective. Reflective listening is an essential tool for the exploration of patient barriers to adherence. Using this technique, the clinician repeats back to the patient the gist of the patient’s statement using different words in order to clarify the patient’s meaning. An example of a conversation using reflective listening is illustrated in Figure 1. In only a few statements—not questions—the clinician identifies an important underlying concern about a potential adverse event of the patient’s treatment.

Understanding ambivalence is also important in helping patients to remain adherent to therapy. As with any medication, ART regimens are associated with both pros (eg, they keep the patient from becoming ill) and cons (eg, patients do not like to be reminded that they have HIV, they are bothered by side effects, or they do not like taking pills). In the process of motivational interviewing, the clinician uses reflective listening to help patients express reasons why they should improve their medication adherence (referred to as “change talk”). These reasons then provide goals and objectives for adherence interventions. Traditional doctor-centered approaches such as direct persuasion, threatening, lecturing, or otherwise trying to convince the patient to follow a particular course of action are avoided in favor of helping patients to identify and expand on their own reasons for wanting to make a change. Samples of change talk

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**Figure 1. Reflective Listening**

Provider: How do you think your medications are working?
Patient: OK.
Provider: But not great.
Patient: Well, I don’t know.
Provider: You’re worried about one of them.
Patient: I guess . . . the atorvastatin.
Provider: You’re concerned it’s not working.
Patient: No, I know that it is working but I worry about diabetes.
Provider: Tell me more about that.
Patient: I read that statins can cause diabetes.
Provider: And you are concerned that you might get diabetes if you keep taking the atorvastatin.
Patient: Right. What’s the story there?
are illustrated in Figure 2. The goal of motivation interviewing is to help the patient generate change talk, and help the pros outweigh the cons. However, the change talk comes from the patient, and not from the provider.

With decreased reliance on traditional methods of direct persuasion, clinicians must make greater use of an alternative communication style—the ability to “inform skillfully.” Several techniques may be helpful in improving the desire of patients to change their behavior. Asking the patient’s permission before sharing an insight with him or her, offering a range of choices, and discussing approaches that other patients have used successfully can help to improve patient acceptance; examples of some of these approaches are illustrated in Figure 3. Although seemingly simple, these approaches are central to the process of shared decision-making, and by using them, patients feel that they are more valued and respected. Simplifying the message is also important to help improve patient comprehension. One technique has been referred to as “chunk-check-chunk.” The patient is presented with a small chunk of information—typically 1 or 2 ideas—after which the provider confirms the patient’s comprehension by asking the patient to repeat what he or she just heard. A similar approach is “elicit-provide-elicit,” in which the provider asks the patient what it is he or she wants to know, the provider gives the patient the requested information, and the provider then confirms that the patient has understood. These approaches can challenge clinicians because they reveal that many patients lack a thorough understanding of the goals of therapy with conventional communication approaches. Many clinicians will find that they need to revise their approach to patient-provider communication to ensure that patients understand important adherence information.

Finally, providers must be clear and direct when communicating with patients. Patients are often unclear about the goals of therapy or their providers’ expectations, and this confusion can be a significant barrier to improving treatment adherence. Clinicians should try to provide clear information, advice, and support, while avoiding threats, judgments, and other overly directive approaches.
CONCLUSIONS

Patient-centered care has been increasingly recognized as an important tool to improve medication adherence for patients with a variety of chronic diseases, including HIV infection. Understanding patients’ individual viewpoints about both their illness and their medications is an important first step in identifying and overcoming adherence barriers. Principles of adult learning theory also provide tools to communicate with patients in a way that is likely to help them to understand the rationale for a particular treatment approach. Understanding patient ambivalence and helping patients to identify their own reasons to improve adherence may lead to better outcomes than more traditional physician-led behavior modification approaches.

REFERENCES

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