

Not Again!

David B. Nash, MD, MBA



I am confident that readers of *P&T* struggle with the critical issue of medication adherence on a regular basis. I am also sure that most of us are frustrated by our feeble attempts to improve low rates of patient compliance, especially with medications needed for chronic conditions. I am always on the lookout for help in this area. An article in the *Archives of Internal Medicine*¹ might just shed some light on our collective conundrum.

Researchers at Emory University School of Medicine in Atlanta and at McMaster University in Hamilton, Ontario, Canada, completed an incredible piece of scholarship: they reviewed every randomized controlled trial published from January 1967 to September 2004. The articles covered interventions that were intended to enhance adherence to therapy with self-administered medications to treat chronic medical conditions. Allow me to set the stage for this study, outline the key components, and comment on their findings.

Summarizing the literature on compliance with therapeutic regimens, the investigators noted the dismal rates of only 50% to 80% of patients who take their medications as prescribed. Because patients with chronic medical conditions consume more of the domestic gross national product (GNP) than ever before, noncompliance has significant clinical and economic implications. Other researchers have noted that the problem of adherence to therapy has been called the “key mediator between good medical practice and positive patient outcomes.”¹ Yet we all know in our daily practice that convincing patients to take a medication for a chronic condition is an excruciatingly difficult process, even for the best primary care doctors who are often saddled with this key responsibility.

Can we gain any new insights from this kind of comprehensive research report? What does the current science tell us? Are there any new take-home messages for the troops on the front lines of adherence?

The researchers evaluated more than 13,000 citations in the literature and then reviewed nearly 1,000 of these articles in full. They narrowed the search down to about 38 articles, which they reviewed according to specific criteria. The investigators “covered the waterfront” in the published peer-reviewed literature of adherence and compliance, and I trust that their methodology was sound.

They used a new statistical technique called effect size. The effect size is calculated from information that is provided in each article or that is directly obtained from the original authors. It “compares the difference in effect between study groups,” divided by the standard deviation of this difference, resulting in standard deviation units.¹

This measure is therefore independent of the method of measurement used and allows an adequate comparison of different interventions for all studies. Effect size enables us to compare apples with apples and oranges with oranges in terms of which type of intervention improves adherence and clinical outcomes.

After reviewing thousands of articles, the authors created a taxonomy by dividing essentially all of the papers into four categories:

- Studies in the first category, called “informational interventions,” described cognitive strategies designed primarily to educate and motivate patients by instructional means. These interventions were based on the concept that patients who understand their condition and its treatment will be more informed, empowered, and likely to comply. An example might be face-to-face, oral, telephone, written, or audiovisual education sessions.
- The second category, called “behavioral interventions,” were strategies designed to influence behavior through shaping, reminding, or rewarding desired behaviors. Examples might include skill-building with the help of a health care pro-

fessional, automated pillboxes, calendars, changes in packaging, or other steps intended to remind patients to take their medications.

- The third category, “family and social interventions,” involved creating a social support strategy, provided by family members or other persons in other groups. Examples might consist of support groups, family counseling, and the like.
- The fourth category was a combined intervention that could include features of some of the aforementioned tools and procedures.

In my view, so far so good; it sounds like a pretty thorough classification based on all of the available research published over a 30-year period.

But now for the letdown—and why I say, “Not again!”

In this systematic review of all of the randomized controlled trials designed to enhance medication adherence over the last 30 years, particularly in chronic medical conditions, only a paltry 16 of the 37 trials that made it all the way to the final analysis reported any consistent improvement in patient adherence. The behavioral interventions that reduced dosing demands of individual therapies consistently improved adherence with a large effect size score, as previously described. Apart from this limited finding, other successful interventions usually contained multiple elements delivered over time.

So where does all of this leave us?

Based on this literature review, the most effective interventions were those that simplified dosing demands and involved monitoring and feedback. Informational interventions, delivered over multiple sessions, are probably also effective but at a lower statistical rate. For *P&T* committee members, this is clearly an important, albeit disappointing, piece of scholarship.

Where do we go from here?

I think we need a totally new approach to bring about patient adherence to and

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compliance with therapy for chronic conditions. I challenge the pharmaceutical industry to support a nationwide research agenda with appropriate resources to conquer this vitally important social challenge once and for all. I don't know about you, but I am tired of reading comprehensive studies that show, over and over again, that our efforts to improve compliance have limited effects. How can we continue to grow our expensive formulary armamentarium—at the same time knowing that few patients actually comply with the drug regimens we prescribe?

If you would like to learn more about the Department of Health Policy's work in this area, you can obtain an educational CD on which we describe this problem in more detail. You can request a copy of "The Impact of Medication Adherence" CD-ROM (MM1207) by calling 1-888-825-5249.

As usual, I am interested in your views on this subject and, of course, your opinion of our special CD on compliance. You can reach me at my e-mail address, david.nash@jefferson.edu. ■

REFERENCE

1. Kripilani S, Yao Xiaomei, Haynes B. Interventions to enhance medication adherence in chronic medical conditions. *Arch Intern Med* 2007;167:540-550.

