



# Intervening at the Intersection of Medication Adherence and Health Literacy

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## ABSTRACT

Medications play a prominent role in the treatment of many illnesses. Failing to adhere to prescribed medication regimens contributes to an array of poor health outcomes. In addition to the cost in terms of human suffering, the financial cost of medication nonadherence is staggering. Poor health literacy has been identified as a major cause of medication nonadherence. This paper focuses on nonadherence related to health literacy in the older adult population in the United States. Eight simple interventions to aid health care personnel in working with this population to improve adherence are provided.

**Keywords:** adherence, health literacy, literacy, medication adherence, medication errors, patient safety

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Medications are commonly used to treat, cure, and prevent illnesses and, accordingly, play a crucial role in improving and maintaining the health and well-being of patients. This role is thwarted, however, when patients do not take their medications as prescribed. Adherence to medication is the process by which patients take

medications as prescribed.<sup>1</sup> Failing to adhere to medication regimens can occur at any point during treatment<sup>1</sup> and is, unfortunately, not an uncommon problem. The National Community Pharmacists Association commissioned a study of American adults at least 40 years old who had been prescribed ongoing medication for a chronic condition.<sup>2</sup>

This CE learning activity is designed to augment the knowledge, skills, and attitudes of nurse practitioners (NPs) and assist in their understanding of how health literacy influences medication compliance.

**At the conclusion of this activity, the participant will be able to:**

- A. Document the extent of medication nonadherence and poor health literacy in the US older population
- B. Elaborate upon the impact of failing to adhere to medication regimens
- C. Describe interventions to improve adherence related to health literacy in older adult populations

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Participants were asked 9 questions related to non-adherent behavior. These included whether, in the previous 12 months, they had missed a dose, failed to fill or refill a prescription, took a lower or higher dose than prescribed, stopped taking the medication early, or took an old medication for a new problem without consulting a physician.<sup>2</sup> Respondents had a median age of 60 years, were taking an average of 4 ongoing prescriptions, and represented 30% of all American adults. An astounding 76% of respondents responded affirmatively to at least 1 of the non-adherence questions, thus indicating failure to take prescription medication as directed.<sup>2</sup>

Failing to adhere to medication regimens is also not a new problem but rather has existed for decades. C. Everett Koop, surgeon general of the United States from 1981 to 1989, in calling attention to the problem, was quoted many times saying, “Drugs don’t work in patients who don’t take them,”<sup>3(p140)</sup> and, “No medication works inside a bottle. Period.”<sup>4(pxxviii)</sup> These longstanding concerns about medication adherence have been inadequately resolved, and the problem has now reached crisis proportions.<sup>5</sup>

Medication nonadherence is considered to be a serious threat to the overall physical, mental, and economic health of the US.<sup>6</sup> The repercussions in both health outcomes and economic impact are significant. Adverse health outcomes resulting from poor medication adherence can range from exacerbations of disease processes to premature death.<sup>5,7-9</sup> Nonadherence also results in increased utilization of health care resources, such as increased visits to clinicians’ offices and emergency departments, increased numbers of hospitalizations and nursing home placements, and greater utilization of home health nurses.<sup>5,7-9</sup> The financial costs of nonadherence are staggering. Poor medication adherence is estimated to cost \$100 billion for excess hospitalizations alone<sup>1</sup> and as much as \$290 billion per year in total avoidable medical spending.<sup>10</sup>

Although medication nonadherence can occur in any population, studies have found the prevalence to be greater in the elderly.<sup>11</sup> Causes are many, including physical, cognitive, psychological, sociocultural, and economic issues.<sup>12</sup> A significant factor is the increased prevalence of chronic illnesses, with a concomitant increase in number of

**Table 1. Levels of Literacy in America’s Adults**

Age group	Below Basic (%)	Basic (%)	Average score
16-18 years	11	23	244
19-24 years	10	21	249
25-39 years	10	18	256
40-49 years	11	21	249
50-64 years	13	21	246
65+ years	29	30	214

*Data from Kutner et al.<sup>15</sup>*

prescribed medications, disproportionately experienced by the elderly population.<sup>11</sup> The increase in medications due to an increased number of chronic illnesses<sup>10-13</sup> simply creates greater opportunities for nonadherence.

### INTERSECTION OF HEALTH LITERACY AND MEDICATION ADHERENCE

Another significant cause of nonadherence in the elderly is poor health literacy, defined as “the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions.”<sup>14</sup> In a study by the US Department of Education<sup>15</sup> assessing the health literacy of America’s adults, individuals were rated on their responses to questions about health care tasks that adults may commonly do, such as reading a pamphlet in a clinician’s office or reading a prescription label. Based on the responses given, literacy levels were scored and categorized as below basic, basic, intermediate, or proficient. People 65 years of age and older were found to have higher percentages of Below Basic and Basic levels and lower average health literacy scores than people in any other age group (Table 1).<sup>15</sup>

The correlation between health literacy and medication adherence is well documented.<sup>7,16-18</sup> A person with low health literacy is twice as likely to misinterpret medication labels. A significant percentage failed to understand instructions, such as “take on an empty stomach,” “take 1 pill every 12 hours by mouth with a meal,” “do not chew or crush; swallow whole,” “take with food,” “avoid prolonged or excessive exposure to direct and/or artificial sunlight while taking this medication,” and “medication

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