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Preface

Successful medical care rests upon three pillars: making the right diagnosis, prescribing the right treatment, and getting patients to take the medication. Medical school and postgraduate training focus heavily on two of those elements: making the right diagnosis and prescribing the right medication. Far less attention—much too little—is paid to what it takes to get patients to take their medication.

As a result, the foundation for treatment success is rotten, and too often patients have less than optimal outcome because they have less than optimal adherence to treatment. Everyone knows this—including patients, doctors, pharmaceutical companies, insurers, and government regulators. Everyone wants adherence to be better. Improving adherence would be a win-win-win for all concerned.

How can we get there? Thích Nhất Hạnh, a Vietnamese Buddhist, had some very good advice: "When you plant lettuce, if it does not grow well, you don't blame the lettuce. You look for reasons it is not doing well. It may need fertilizer or more water or less sun. You never blame the lettuce." Blaming the patient for poor adherence is not helpful. The responsibility is on us. The way we in the healthcare system prescribe medication is simply not a good approach for getting patients to take their treatment.

In this book, we discuss how poor adherence to treatment is or, in other words, how poorly we in the healthcare system are at getting our patients to take medication. We describe novel, basic, fundamental truths about what must be done to have any hope of getting patients to take medication well. We focus on practical tools and advance psychological methods to help patients achieve what we all want: better adherence and better outcomes.

Winston Salem, NC, USA

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Chapter 1
Reasons for Nonadherence

Adrian Pona, Abigail Cline, and Steven R. Feldman

Introduction

Poor patient adherence is especially challenging in the field of dermatology, where only 50% of patients with chronic skin conditions adhere to the treatment plan outlined by their provider [1]. About one-third of patients never redeem their prescriptions from a dermatology clinic. Even if patients do fill the prescriptions, adherence often drops off after a few days. Poor adherence leads to poor health outcomes and increased financial expenditure for patients. By recognizing and addressing common barriers to treatment adherence, providers may help patients successfully incorporate and adhere to treatment regimens. Improving patient adherence may provide a convenient way to improve patient outcomes and decrease healthcare costs.

While there are various reasons for nonadherence, one conceptual model of barriers to adherence focus on patient, prescriber, and healthcare system factors [2]. Nonadherence can also be categorized into three phases: *initiation*, *implementation*, and *persistence*. *Initiation* includes failure to fill and begin taking a prescription [3]. *Implementation* is the patient's ability to agree, comprehend, and translate the healthcare provider's instructions. Finally, *persistence* involves maintaining the recommended treatment regimen [3, 4].

This chapter will first discuss barriers specific to patients, providers, and healthcare systems, then it will discuss common barriers that are shared between patients and providers.

Patient-Centered Barriers

Patient barriers create a significant practice gap in all specialties. A patient-centered approach may help providers investigate potential risks for nonadherence. To bridge practice gaps, patient barriers must be recognized. Patients may fail to take their medication unintentionally or intentionally. Unintentional nonadherence may be related to forgetfulness, complex treatment regimens, and

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Table 1.1 Intentional and Unintentional Reasons for Nonadherence [1–14]

Intentional	Unintentional
Patient beliefs	Forgetfulness
Fear of adverse effects	Lack of health-related education
Patient preference	Psychiatric illnesses
Complex treatment regimen	Poor communication
Medication cost	Failure to refill medication
Insurance difficulties	Limited access to healthcare
Poor patient-physician relationship	Poor patient-physician relationship

psychiatric illnesses [5–8]. Reasons for intentional nonadherence may include patient beliefs, fear of adverse effects, and patient preference (Table 1.1) [9].

A patient's beliefs can influence whether they initiate, implement, and persist with therapy. A patient may believe he received the wrong diagnosis, and therefore wrong medication, from his provider. If a patient feels he was not adequately examined and understood, he may be less likely to fill or take the suggested medication. A patient might also believe his condition is only temporary, and therefore prematurely stop therapy after some improvement. This can be especially challenging in chronic conditions that require continuous treatments [10].

A common reason for intentional nonadherence is a patient's fear of adverse effects due to the medication [11]. "Steroid phobia" describes negative feelings and beliefs about using topical corticosteroids. Common concerns about topical corticosteroids include skin thinning, the potential of topical corticosteroids to affect growth and development, and nonspecific long-term effects [12]. In one study, prevalence of steroid phobia in caregivers of children with atopic dermatitis (AD) reached about 38% [12]. If patients or caregivers fear of the topical corticosteroid side effect profile, they may be less willingness to use the medication as prescribed.

Patient preferences can impact adherence; therefore, a patient-centered approach may be helpful. Addressing and reconciling patient goals and preferences can help providers and patients agree on a feasible treatment regimen [13]. For example, some patients with severe psoriasis may prefer oral over injectable medications, even if the injectable medication is more likely to result in better disease control. Patient preference of a particular vehicle formulation for their topical medication may also impact their level of adherence [14, 15]. Subjects satisfied with their prescribed medication are more adherent than unsatisfied subjects ($P < 0.001$) [16].

Prescriber-Centered Barriers

Although the responsibility for poor adherence is often placed on patients, there is much that physicians and the healthcare system can do to enhance adherence behavior (Table 1.2). Providers may contribute to patients' poor adherence by prescribing expensive medications that patients cannot afford, recommending complex regimens that are difficult to follow, and failing to adequately educate patients on the medication's benefits and side effects. All of these factors lead to a poor patient-provider relationship, which can also result in poor adherence [11]. By recognizing and addressing provider-specific barriers, providers can standardize how they prescribe and improve adherence outcomes in patients.

The high cost of prescription drugs means many patients cannot afford their medications. Patient may fail to pick up their medications, skip doses to make the medication last longer, or stop treatment early due to the cost. However, providers are often unaware how much medications will cost patients. Providers and patients often fail to seek out pricing information before filling prescriptions. Prescribing generic prescriptions increases the likelihood that the patient can afford a medication [17].

Table 1.2 Patient, prescriber, and Healthcare-Centered Barriers to adherence [1–9, 11–18]

Patient-centered barrier	Prescriber-centered barrier	Healthcare-centered barrier
Forgetfulness	Complex treatment regimen	Limited access to healthcare
Psychiatric illness	Prescribing high cost medications	Restricted formularies
Patient beliefs	Poor communication	Medication cost
Fear of adverse effects		Switching formularies
Patient preference		Copayments

Complex treatment regimens often confuse patients and decrease their motivation, leading to poor adherence. Prescribing multiple medications after one office visit or adding prescriptions on top of a large list of medications, can reduce patient adherence. Simplifying treatment regimens reduces the burden of treatment and increases the likelihood that patients will adhere. Patients are more likely to follow a once daily treatment compared to twice daily. Combination medications also reduces the burden of treatment and increases adherence [11, 18, 19].

Poor communication by the provider to the patient can also result in poor adherence. Providers may not adequately explain the patient's condition, the need for medication, treatment expectations, and potential adverse effects. Patient education is be a key component of the clinical encounter. It offers an opportunity to address patient concerns and build a strong patient-provider relationship. By failing to communicate basic information, healthcare providers may jeopardize a patient's disease and treatment understanding and overall adherence [11, 20, 21].

Prescribers who fail to create a strong bond with their patient may increase the risk of nonadherence. Using a patient-centered approach may strengthen trust between both parties and prevent a poor patient-provider relationship [11, 22–24].

Healthcare-Centered Barriers

Healthcare-associated barriers to adherence include limited access to healthcare, restricted formularies, switching to a different formulary, and high costs for medications, copayments, or both [25–27]. The patient, provider, pharmacies, hospitals, insurance, and pharmaceutical companies are all components of the healthcare system [28].

Factor that create poor access to healthcare— including living in an area with poor access, lack of transportation, lack of adequate insurance, financial issues, and absence of other resources— also influence adherence [17, 29]. Other healthcare-associated factors that may influence adherence include extensive waitlist for an appointment with a specialist, lengthy wait time within the clinic, and confusing healthcare referral systems [30–32].

Insurance also has a strong influence on healthcare-associated nonadherence. Insurance issues include difficulty finding in-network healthcare providers, drug plans that do not cover certain prescription medications, and unaffordable copayment [11, 22, 23, 33]. For example, providers may not prescribe the best medication if it does not fall in a patient's restricted network formulary [34]. Such limitations impact the patient, provider, and healthcare system.

Common Barriers of Patients and Providers

Most adherence barriers are described as patient-oriented, but reframing common barriers as provider-oriented can help physicians influence adherence [11]. The focus of this section is to identify and discuss barriers to medication adherence that are common to both patients and providers

Table 1.3 Common barriers for patients and providers [6]

Patient	Provider
Treatment education	
Poor health literacy	Poor communication skills
Beliefs and perception of symptoms	
Fear of adverse effects	Believing patients are adherent
Treatment dissatisfaction	Failure to acknowledge patient beliefs
Forgetfulness	
Failure to remember regimen	Failure to provide instructions
Psychiatric illness	
Depression	Failure to recognize psychiatric comorbidities
Anxiety	Failure to provide appropriate referrals
Cost and insurance	
Lack of insurance	Writing expensive prescriptions
Expensive copay	Failure to provide patient assistance
Complex treatment regimen	
Polypharmacy	Prescribing multiple medications
Inability to follow instructions	Failure to offer prompt return visit

(Table 1.3). Examining shared barriers from both patients and providers highlights each of their specific responsibilities to address these concerns.

Treatment Education

Patient

Poor patient education is a common cause of unintentional nonadherence [4]. Patients may have insufficient understanding of the reasons, benefits, and adverse effects of the prescription medication [17]. A patient's capacity to process and understand basic medical information is defined as health literacy. [35, 36] In the United States, an estimated 90 million have poor health literacy skills [37]. In a study investigating health literacy in the United States, 12% of adults had proficient health literacy, 53% had intermediate, 22% had basic, and 14% had below basic health literacy [38]. Limited health literacy is associated with poorer patient-physician communication, health-related skills, and health outcomes. Poor health literacy is also associated with nonadherence [39]. Patients may not understand the importance of continuously using their medication in chronic conditions, as the terms controlled and cured may be confusing [40]. When psoriasis subjects were asked about their reasons for not applying topical corticosteroids, 20% reported inadequate knowledge about their disease [16]. Recognizing poor health literacy and explaining the rationale behind the prescribed medication can bridge patient education gaps.

Provider

There is a link between patient adherence and provider-patient communication, Communication contributes to the patients' understanding of the illness, the need for medication, and the risks and benefits of treatment. However, if a provider insufficiently addresses these areas, patients may leave feeling confused about their diagnosis, their medication, and their treatment plan [17]. Providers may also cause nonadherence by not providing a definitive diagnosis, providing too much information, or avoiding simple language [4, 41, 42].