Patient Preference and Adherence

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REVIEW

# Barriers to treatment: describing them from a different perspective

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**Background:** Poor adherence is the result of many barriers. Most of the adherence research has focused on the patients' hurdles to adherence, instead of the responsibility the physician has for assuring adherence to treatment.

**Objective:** The purpose of this review is to identify barriers to medication adherence and refocus how we describe those barriers in terms of physician behavior hurdles.

**Methods:** PubMed was systematically searched for systematic reviews published between January 01, 2010, and December 06, 2017, that provided barriers to medication adherence. The searches were limited to reviews having adherence to medication prescribed in the outpatient setting as the main topic.

**Results:** Thirty-one reviews were included in this review, covering 13 different disease categories. Fifty-eight different barriers to adherence to medications for chronic conditions were identified. Nineteen barriers were cited 6 or more times, and these were further categorized based on the World Health Organization's 5 dimensions of adherence and the number of times cited.

**Conclusion:** This review provides clear evidence that adherence to medication is affected by multiple barriers. To facilitate this, adherence barriers can be framed as physician/health system hurdles. With that focus in mind, we may put the responsibility where we have the most control.

**Keywords:** medication adherence, patient compliance, medication non-compliance, patient acceptance of health care

## Introduction

Poor adherence is a problem across every medical specialty, yet good adherence is a key to achieve favorable outcomes. The WHO defines adherence as, "the extent to which a person's behavior – taking medication, following a diet, and/or executing lifestyle changes – corresponds with agreed upon recommendations from a health care provider."[1] This definition does not indicate who is responsible for assuring adherence, but it does focus attention on patient behavior.

Much adherence research has focused on patients' hurdles to adherence. This perspective does not emphasize the responsibility of the physician for optimizing adherence to treatment. Physicians frequently do not effectively communicate to their patients about the basic information of treatment plans.[2] Patients may be left with concerns about adverse effects and with lack of comprehension of disease and treatment that adversely affect their adherence.[3]

Framing the problem of poor adherence on patients' fear of side effects or lack of understanding does not clearly emphasize the physician's responsibility to appropriately address these concerns. The same hurdle can be reformulated as a problem

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of physicians' inadequate, ineffective communication to patients of critical information. This reformulation demonstrates that physicians have a responsibility to minimize barriers to non-compliance by changing that which physicians have control over: our own behavior. The aim of this article was to identify barriers to medication adherence and refocus how we describe these barriers in terms of physician behavior hurdles.

## Methods

A 2013 article by Kardas et al[3] published a list of negative factors affecting medication adherence found by including systematic reviews from January 01, 2001, to December 31, 2009. The factors were categorized using the WHO's 5 determinants of adherence and further classified as having a negative, positive, or neutral effect on medication adherence. For the purposes of this paper, systematic reviews from January 01, 2010, to December 06, 2017, were included to build upon the work of Kardas et al. The focus was shifted toward the negative factors affecting medication adherence and how the health care system impacts them, in order to reflect evolving trends in medical practice.

PubMed was searched for relevant publications with the following inclusion criteria: systematic reviews, written in the English language, a publication date between January 01, 2010, and December 06, 2017, and having barriers to adherence as the subject (Figure 1). The following search terms were used: barriers to medication adherence, barriers to medication compliance, barriers to patient adherence, and barriers to patient compliance. A total of 110 full-text articles were assessed for eligibility, and papers were excluded based on 4 criteria: 1) the study focused on adherence-enhancing interventions; 2) the study focused upon adherence to a non-medication, such as diet or exercise; 3) barriers to adherence were not provided in the paper; and 4) scale of adherence was the primary scope of study. No paper was excluded due to quality; however, each study selected was a review article published in a peer-reviewed academic journal. Most sources were review articles; 3 of the articles also included primary data evaluating compliance in addition to the review.

From each review, barriers to medication adherence were extracted. The number of times each specific barrier was mentioned in either the results section or a data table within each review was recorded.

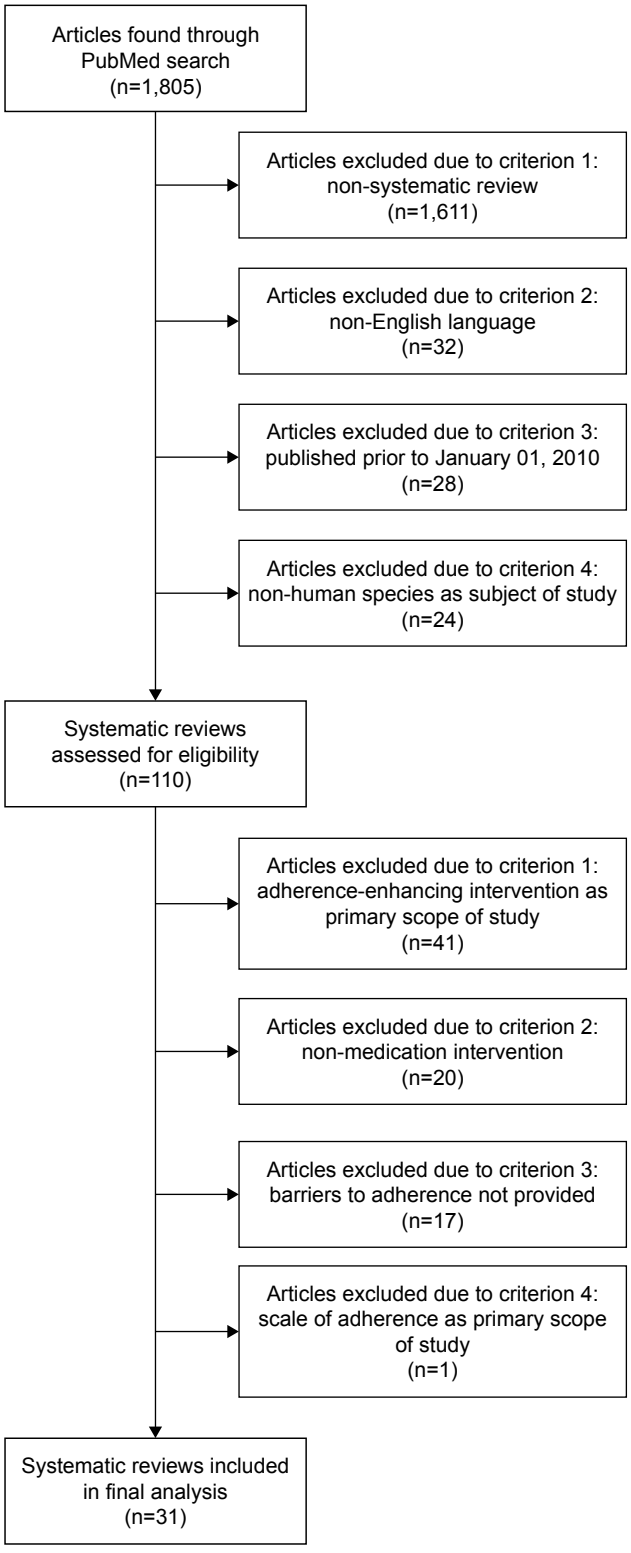


**Figure 1** Flow diagram of article selection process.

## Results

We found 31 systematic reviews describing barriers to medication adherence; 24 of the reviews focused on medication given in the outpatient setting for a specific chronic condition. The remaining 7 reviews discussed the patient-reported barriers to medication adherence for a specific patient population, eg, pediatric patients. The long-term conditions and patient populations reported on within the reviews varied (Table 1). HIV (6 reviews)[4–9] and diabetes[10–13] were the most common

**Table 1** Long-term conditions and patient populations covered by selected reviews

| | Number of sources reporting |
|---|---|
| Long-term condition | |
| Hypertension | 2 |
| HIV | 6 |
| Diabetes (Type I and II) | 4 |
| Psoriasis | 1 |
| Mental disorders (bipolar and schizophrenia) | 1 |
| Cardiac disease | 1 |
| Asthma | 1 |
| Epilepsy | 1 |
| Inflammatory bowel disease | 2 |
| Rheumatoid arthritis | 1 |
| Cancer | 1 |
| Sickle cell disease | 1 |
| Tuberculosis | 2 |
| Patient population | |
| Not specified | 11 |
| Adults | 12 |
| Adults and children | 2 |
| Children | 2 |
| Adolescents | 2 |
| Elderly | 2 |

chronic conditions studied. A little over one-third of the reviews (11 reviews) did not specify a patient population, while adults (12 reviews) were the most common patient population specified.

Through the literature review, 58 different barriers to medication adherence were found; 19 of these barriers were cited 6 or more times (Table 2). These were further categorized based on the number of times each appeared throughout the 31 sources and the reason for non-adherence based on the 5 dimensions of adherence defined by the WHO.[1] The 5 dimensions of adherence are as follows: condition-related, health care system, social and economic factors, therapy-related, and patient-related.

## Discussion

The literature regarding non-compliance tends to describe barriers as patient issues, rather than barriers in terms of what a doctor does or does not do during the office visit. We listed the most commonly cited barriers and redefined them as physician/health system hurdles that can be addressed to improve adherence (Table 2). Ultimately, the only part of the compliance equation that health care providers can directly alter is our own behavior. With this focus in mind, we will address the 3 most commonly cited barriers and how each can be reframed; hence, the focus emphasizes physician's responsibility for improving the daily practice of medicine to increase adherence and, therefore, patient outcomes.

The most frequently cited patient factor for non-adherence is depression leading to decreased motivation. If we consider

**Table 2** Barriers to medication adherence

| Barrier to adherence | Number of times cited | Reason for non-adherence | Physician/health system hurdles |
|---|---|---|---|
| Health literacy[4,10,17,22,26,27,29] | 7 | Health care system dimension | Inadequate transmittal of information about condition and medication |
| Lack of medication knowledge[13,16,19,20,22,27] | 6 | | Inadequate transmittal of information about medication |
| Poor communication on doctor's part[7,10,13,15–17,20,28] | 8 | | Not applying effective communication strategies |
| Do not trust doctor[5–7,10,14,16,17,24,27] | 9 | Patient-related dimension | Leaving patients with a lack of trust in the doctor |
| Concern about adverse effects, avoid side effects[5,6,8,10,12–14,17–20,24,27] | 13 | | Inadequate transmittal of information about medication |
| Beliefs about medication[12,15–17,22,27] | 6 | | Inadequate attention to aligning treatment with patient's beliefs |
| View on symptoms – felt good so did not take medication[8,14,24,32–34] | 6 | | Not adequately educating patients about need for treatment of asymptomatic disease |
| Alcohol/substance misuse[4,6,8,9,19,22,30] | 7 | | Inadequate effort to address patient's substance abuse |
| Forgot[6,8,11,17,19,20,23,24,31,32,34] | 11 | | Inadequate reminder systems put in place |
| Depression leading to reduced motivation[4,6,8,9,11,13–23] | 16 | | Inadequate effort to address depression |
| Cost and lack of insurance coverage[6,10,11,15–18,20,22,26,27] | 11 | Social and economic dimension | Prescribing unaffordable medications |
| Lack of caregiver[6,10,11,16,17,19,24,27] | 8 | | Inadequate attention to patient's support |
| Secrecy/stigma[5,6,8,9,11,24,26,28] | 8 | | Inadequate attention to patient's beliefs about their condition |
| Access to health care and resources[4,5,7,10,17,20,24,26,27,29] | 10 | | Inadequate provision of service at patient's location |
| Cultural beliefs[4,5,7,10,13,17] | 6 | | Inadequate attention to aligning treatment with patient's cultural beliefs |
| Busy, competing priorities[5,6,8,11,20,24,34] | 7 | | Failure to consider patient's schedule when prescribing medication |
| Education level[5,14,16,19,22,26,29,30] | 8 | | Inadequate transmittal of information about condition and medication |
| Change to routine[8,15,17,19,20,34] | 6 | Therapy-related dimension | Failure to consider patient's schedule when prescribing medication |
| Pill burden, drug regimen too much[8,9,11,15,17,22–27,31,34] | 13 | | Failure to simplify amount of medications and/or dosing frequency |

this barrier as "Inadequate effort to address depression," the need for depression screening in physicians' offices and appropriate treatment or referral becomes clearer and more salient. With staggering numbers of people experiencing depression, use of formal screening tools or simply being watchful for flat affect or other signs of depression may be warranted.[35] Given the potential impact of depression on patients' adherence and treatment outcomes, putting the onus on physicians to recognize and deal with our patients' depression issues may be appropriate.

Concern about potential adverse effects is another commonly reported reason for poor adherence; actual experience of an adverse effect is a much less commonly reported issue. Instead of focusing on the patient's fear of adverse effects, this barrier can be reframed as inadequately putting potential side effects into perspective. When physicians try to reassure patients that a risk occurs in only 1 in 1,000 patients imagine being the 1; telling patients 999 out of 1,000 do not get the problem is much more reassuring. Pictorial aids that graphically demonstrate the magnitude of risk can be helpful in further improving comprehension and adherence.[36]

The complexity of treatment regimens is another frequently cited barrier that can be reframed as "the physicians prescribed too complex a treatment regimen." Adherence is best in patients who were prescribed 1 medication rather than multiple medications.[37] Higher frequency of dosing also reduces adherence.[38] While there may be reasons to avoid prescribing combination products (eg, if they are costly), the potential to improve adherence and outcomes by reducing the number of medications and frequency of dosing should not be ignored.

Development of novel treatments may be helpful, but we may get more bang for the buck by assuring that the medications we already have are properly used. To facilitate this, adherence barriers can be framed as physician/health system hurdles. With that focus in mind, we may put the responsibility where we have the most control. Although we have chosen to focus on the responsibility of the physician, we realize that patients encounter a wide variety of health care professions on a day-to-day basis, providing an opportunity to redefine barriers and maximize adherence even further. While we focused on changing the perspective to one on the physician, in the bigger picture the health care system should take responsibility too, not just the physician. Every component of the health care system could be involved in encouraging adherence. Nurses, pharmacists, and all health care providers who have touch points with patients may make important contributions. Just as we have framed the issue to clearly encourage physicians to change their behaviors, a similar approach could be taken in the broader health care system to make the system more responsible for and effective at addressing adherence issues.

## Disclosure

The authors report no conflicts of interest in this work.

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