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- Vildan YILDIZ
- Oya ÖZDEMİR
- Yeşim GÖKÇE KUTSAL

Correspondance

Oya ÖZDEMİR
Hacettepe University, Faculty of Medicine,
Department of Physical Medicine and Rehabilitation,
ANKARA

Phone: 903123094142
e-mail: oyaunalozdemir@yahoo.com

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[1] Hacettepe University, Faculty of Medicine,
Department of Physical Medicine and Rehabilitation,
ANKARA

REWIEW ARTICLE

MEDICATION NONADHERENCE IN ELDERY AND RECOMMENDATIONS TO IMPROVE ADHERENCE

Abstract

Medication adherence means that patients use their drugs as recommended. There are many factors that affect medication adherence such as age, polypharmacy, patients' concerns about drug adverse effects, beliefs about medication, lack of social support, socioeconomic factors, health system, depression, lack of health literacy, communication with health care providers, and cultural considerations. Inadequate adherence to medication regimens causes worsening of disease, increases morbidity and mortality. On the other hand, nonadherence may lead to misuse of medical resources and cause serious regressions in health indicators particularly in developing countries. All over the world, one of the most substantial difficulties in health care services is ensuring patients to fully adhere to treatments. To improve adherence with treatment, there are various strategies. The evaluation of individual differences of patients is crucial for planning the treatment, hereby this approach could enhance the medication adherence of patients. The aim of this article is to review the factors leading to medication nonadherence and make recommendations to improve adherence in elderly patients.

Key Words: Medication adherence; Education, medication; Aged

DERLEME MAKALE

YAŞLI HASTALARDA İLAÇ UYUMSUZLUĞU VE UYUMU ARTIRMAK İÇİN ÖNERİLER

Öz

Tedavi uyum, hastaların ilaçlarını önerildiği şekli ile kullanmasıdır. Tedaviye uyumu etkileyen faktörler arasında yaş, çoklu ilaç kullanımı, hastaların ilaç yan etkileri hakkındaki düşünceleri, sosyal destek azlığı, sosyoekonomik faktörler, sağlık sistemi, depresyon, sağlık okuryazarlığının olmaması hekimi ile iletişim, kültürel farklılıklar ve yer almaktadır. Tedaviye uyumun yetersiz olması, hastalıkların daha da kötüleşmesine, morbidite ve mortalitenin artmasına yol açar. Ayrıca, tedaviye uyumsuzluk tıbbi kaynakların yanlış kullanımına ve özellikle gelişmekte olan ülkelerde sağlık göstergelerinde ciddi düşüşlere neden olur. Tüm dünyada, sağlık hizmetlerinde en önemli zorluklardan biri, hastaların tedavilere tamamen uymalarını sağlamaktır. Tedaviye uyumu arttırmak için çeşitli stratejiler mevcuttur. Tedavinin planlarken hastaların bireysel farklılıklarının değerlendirilmesi kritik önem taşır, böylelikle hastaların tedavi uyumu artırabilir. Bu makalenin amacı tedaviye uyumsuzluğa neden olan faktörleri gözden geçirmek ve yaşlı hastalarda uyumu artırmak için önerilerde bulunmaktır.

Anahtar Sözcükler: İlaç uyumu; Eğitim; Yaşlı

INTRODUCTION

Definition of the problem

Adherence to treatment means that patients use their medication as recommended. Using the word 'adherence' is better than 'compliance'. Because 'compliance' means that the patient has passively adhered to the orders of the healthcare provider and has not been included in the treatment plan. But these two words are used as if they were synonymous (1). Nonadherence involves not only medications, but also breaking appointments, the failure to follow advised eating behaviors and the other recommended health care applications as well (2).

All over the world, one of the most important challenges in health care services is ensuring patients to fully comply with their treatments. The rate of adherence with treatment for chronic diseases is 50% on average. In the United States, the adherence rate of patients with hypertension is only 51%. In developing countries, compliance rates are even lower, 43% in China, 27% in Gambia (3). Poor adherence to medication causes worsening of the diseases, enhanced morbidity and mortality (4). Furthermore, it may lead to misuse of medical resources and serious declines in health indicators especially in developing countries (3). The aim of this article is to review the factors leading to medication nonadherence and make recommendations to improve adherence in elderly patients.

Factors that affect adherence

1. Age

Comorbidity and polypharmacy are more common in the elderly compared to the youngers. Although full adherence to the recommended treatments is crucial for the treatment of chronic diseases, with increasing numbers of medications, low adherence is a growing concern in elderly.

In geriatric population, there are various medication adherence problems because of the lack of adequate training of the patients (5). Additionally, there are insufficiencies in cognitive health and physical abilities so the risk of nonadherence to medications may be higher at this ages. Another issue is, older patients may deliberately choose not to adhere to medication (called as intentional non-adherence) to avoid adverse effects. The interventions employed to improve adherence must be multifaceted and the patient perspective must also be considered. Practical approaches such as; reducing unnecessary drugs and simplifying dosage regimens are recommended (6).

2. Polypharmacy

It is well known that polypharmacy increases drug related morbidity and mortality and impairs quality of life**.** Furthermore, polypharmacy in the elderly also increases cost, and is a great challenge for healthcare systems. The incidence of drug interactions and adverse effects increases exponentially with the increase in polypharmacy. It has been also shown that polypharmacy correlates with the patients' age, sex, marital status, number of children, status of retirement, and presence of chronic medical conditions (7). Because of the high prevalence of comorbid systemic disorders in the elderly population, many of them are treated with multiple medications. In the last years, the numbers of elderly exposed to polypharmacy (defined as concomitant prescription of ≥ 5 drugs) is rapidly increasing (8). Approximately 20-40% of adults aged ≥ 65 years in developed countries are prescribed ≥ 5 medications (9). The increasing number of drugs prescribed at hospital discharge was found to be correlated with nonadherence. Unfortunately, most of the patients did not understand the purpose of the medications prescribed (10).

Safety of drug use, which is defined by the maximum efficacy, safety of drug and its convenience for the patient and cost-benefit relation, is especially important for elderly. Therefore, the physicians should pay great attention for safe use of drugs in this group. Further studies are warranted to find out the most effective way to reduce polypharmacy,

especially in the frail elderly, and to quantify the real advantages of simplifying their drug regimens in terms of improved quality of life (11).

3.Concerns about drug adverse effects

Nonadherence to medication is mostly in association with patients' apprehensions of medication adverse effects. Nonadherence with drugs due to adverse effects is defined as 'rational nonadherence'. It isn't possible to prevent rational nonadherence by removing the patient's specific adverse effect concerns (12). The patients who have had adverse effects from previous medications are less adhere to treatment. In a study with 1015 patients who received bisphosphonate treatment showed that participants who had experienced symptomatic adverse effects were 6.8 times more likely to be nonadherers than those least symptomatic (13). It is important to evaluate the adverse effect profiles and the health care provider should interview the patient at each visit before and after the first prescription (12).

4. Beliefs about medication and lack of social support

Patients' social group members affect their attitudes and adherence to treatment. If the patients' beliefs are not compatible with the healthcare provider, recommendations may be more difficult to follow (14). Appropriate communication and support of patients' families significantly related to the adherence to treatment and facilitate following the recommendations of physicians. If the patients suffer from chronic disabilities, the understanding and support of the family becomes more important (2). It has been shown that the patient's beliefs and attitudes about the efficacy of treatment, experiences with previous pharmacological treatments, and lack of motivation influence the degree of adherence (15). In addition, patients who have asymptomatic diseases are frequently disposed to not participate their treatment regimen. For all these reasons, communication between doctors and patients is as important as family support.

5. Socioeconomic factors

Among the patients with low socioeconomic status, the barriers to medication adherence has been identified as high medication costs, lack of transportation, and poor understanding of directions (16). Consideration of the economic status of the patient is extremely important. By recognizing the patients' economic limitations, their ability to adhere to their medication may be improved (17).

6. Health system

In an overloaded health system, physicians have limited time to examine the patients due to excess number of patients. In such a system, the time spent by the clinician with the patient may be insufficient to completely evaluate and understand the patients' drug intake behavior. Due to time insufficiency, physicians may not be able to talk with patients about the importance of treatment compliance and strategies for increasing treatment success (17).

7. Depression

One of the strongest reasons for the patient's treatment incompatibility is depression, which is associated with serious limitations in access to health care and daily functioning. The likelihood of depressive patient's nonadherence to medical treatment is three times higher when compared to non-depressive patients (18).

Half of the major depression patients who are prescribed antidepressants do not continue to take their medicines three months after the beginning of the treatment (1). Depressed patients have complaints of pessimism, mental impairment and community support, and these can reduce their willingness and facility to adhere medications. Patients who have psychiatric illness typically have enormous difficulties following a drug regimen, but at the same time they have the greatest potential for benefit from the treatment (19). To recognize the importance of the mental health of the patients can help to reduce the risk of nonadherence of the patients and improve the health indicators (14).

8. Lack of health literacy

The lack of information about the patients' illnesses, lack of participation in the decision-making process and inadequacy of medical literacy, adversely affect patients' adherence to the treatment. Many patients with low basic health literacy may not be able to read a medicine bottle or poison warning. And it is clear that if the patients are not able to read and understand basic written medical instructions, treatment compliance rates are decreasing (20). Patients with inadequate healthcare literacy are more likely to be hospitalized. Approximately 90 million adults, in the United States alone, have insufficient medical literacy which puts them at risk for increased hospitalizations and worse clinical outcomes (21). In a research of over 2500 patients found that approximately one third had insufficient health literacy. Of these, 42% misapprehended directions for taking drugs on an empty stomach, 25% misapprehended the setting the next appointment date, and almost 60% were incapable to read and understand a typical informed consent form (22).

In order to improve medical adherence, instead of standard written instructions, using pictorial and audiovisual educational materials may be more effective on patients.

9. Communication with health care providers

A good patient-physician relationship, based on good communication is important to achieve successful outcomes in treatment. Unfortunately, communication of the physicians with their patients is often insufficient, which reduces the compliance of patients with treatment (23). Zolnierek et al. reported that there is a 19% higher risk of nonadherence among patients whose physician communicates poorly than among patients whose physician communicates well (24).

Effective communication in between the patient and the physician has a positive effect not only on emotional health of the patient but also on resolution of symptoms including pain, functional and physiological status. Patients need to feel that they are active participants in the planning of treatment and this can facilitates adherence to treatment. So they should be encouraged to ask questions as much as possible and given explicit information about their situations. It should also be taken into consideration that, patients frequently misapprehend usual directions. So, it is important for physicians to use simple, daily language and have the patient repeat the directives to confirm proper understanding.

10. Cultural Considerations

In order to provide the best health care, a physician should comprehend the patient's social, cultural and personal history as well. The evaluation of some basic cultural differences between the patient and the clinician is crucial for planning the treatment, hereby this approach could enhance the treatment compliance of patients. Health care providers can built trust with patients and prevent any culture- or belief-related adherence barriers by accepting the existence of cultural beliefs and attitudes (14).

Recommendations to improve adherence

There is no single method to increase treatment compliance for all patients. First step to improve treatment compliance is to correctly assess whether patients adhere to the recommended treatment. Adherence assessments that are simplistic and nonthreatening will also probably yield the most truthful and accurate replies (14).

Most methods used for increasing medical adherence have required combinations of behavioral interventions and reinforcements in addition to increasing the convenience of care, providing educational information about the patient's condition and the treatment, and other forms of supervision or attention.

Educational intervention is an effective way to increase compliance with treatment. The education of the patients with their family members may be

more efficacious. Effective patient education should be multi-factorial and privatized according to the patient's individual differences (4). It is important to use the 'teach-back approach' when talking about patients' illnesses or treatments. By asking questions about the considerable important points, the health care provider can determine whether the patient fully understands the subject (18).

Good communication between the physician and the patient is an effective way for enhancing treatment compliance. It is important for optimal communication between the patients and physician to create an encouraging environment where the patients are praised for achieving their treatment purposes and where permission is given to fairly ask questions about their treatment (18).

Health care providers can provide efficacious patient education by using everyday language, particularly when giving recommendations for treatment (2).

Relationship of trust between doctors and patients may greatly improve the patient's outcome. In primary health care, adherence to recommended treatment regimens was found to be nearly three times higher in patients, due to the fact that doctors fully recognize their patients and the good relationship of trust are valid between patient and physician (25).

Physicians should consider patients' cultural beliefs and attitudes in order to determine the most appropriate treatment options. By accepting the existence of various cultural beliefs and attitudes, physicians can establish reliable relationships with patients and can eliminate any adherence difficulties associated with their beliefs (14).

Regulation and improvement of dosing programs is an important factor in following treatment plans and improving treatment outcomes. Many methods can be used for improving daily drug dosing, such as simplifying the regimen, using pillboxes, and suggesting tips to remind patients to take medication (26). Reducing the dose frequency of drugs can be used to reduce drug abandonment rates. With this strategy, patients' compliance with medical treatment increases and long-term treatment results increase (27). In a study involving approximately 6,000 patients, new lipid-lowering or antihypertensive drugs were added to previous treatments of patients. Treatment compliance rates decreased between 30 and 41 % and, the treatment compliance of patients taking more than 10 medications per day was only 20% (28).

One strategy that may be effective in promoting adherence is reducing the number of pills by using fixed-dose combination therapies. When prescribing medications, choosing long-release formulations or fixed dose combinations is an important strategy in increasing drug adherence. Thus, both the rate of polypharmacy and related complications can be reduced, and also achieved significant cost savings (6). A meta-analysis of an average of 20,000 patients comparing fixed dose and free drug regimens found a 26% reduction in the risk of nonadherence in the group using the fixed dose combination (29). When the frequency of drug doses of patients can not be reduced, drug intake should be matched to their daily living activities. For patients, remembering to take pills is more easier when physician advised before/after a meal or before bedtime (2)

Providing a shame-free environment is necessary for patients with poor health literacy. Because poor health literacy affects health care negatively. Pictorial or audiovisual materials may be a good method while educating the patients with poor health literacy in place of written instructions.

The adverse effects should be considered. Because patients may leave their medications because of their fears about adverse effects. Therefore, the possible adverse effects of the drugs should be discussed clearly in each visit with the

patients. And patients should be removed from their false beliefs about adverse effects (12).

It is crucial for patients to **keep their appointments,** and some behavioral interventions can be used for reminding their appointments. Reminders via telephone, mail, computer or home visits improve patients' compliance with appointments (30).

A good health system is essential to assess the adherence to treatment and to allow adequate time for each patient to receive personalized treatment. Therefore, necessery health system changes should be made to ensure the best health care.

As the former Surgeon General C. Everett Koop reminded us, "Drugs don't work in patients who don't take them" (1).

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