

Relationships between Adherence to Medication, Patients' Beliefs and Demographic Factors

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Abstract

Introduction: Patients' adherence to medication has an important role in controlling the disease and is the key to treatment success; however, the situation of patients' adherence to medication is not optimal and despite the importance of the issue, little research has been conducted in Iran to investigate the factors influencing it. **Objective:** This study focuses on determining the relationships between adherence to medication, patients' beliefs and some demographic factors in patients with chronic diseases. **Methods:** This descriptive cross-sectional study was conducted on 200 patients with a chronic disease in the hospitals and clinics in the Khalkhal city in the year 2014. Data were collected through interviews by questionnaires of the Morisky Medication Adherence Scale and the Beliefs about Medication Questionnaire and were analyzed using the SPSS software (version 18) through Chi-square test and Pearson Correlation Coefficient. **Results:** Findings showed that 42.5% of the participants were male and the rest were female (57.5%) with an average age of 33 ± 13.7 . Nineteen percentage of the participants specified that they had no problem taking their medication as directed; but, 58.5% of the patients usually discontinued their medications after feeling better. Concerning the demographic factors, the level of education had a significant relationship with drug discontinuation without counseling a doctor, the feeling of being worse by medication use was significantly higher in male patients and no significant relationship was observed between adherence to medication and age. The results also indicated a significant relationship between adherence to medication and patients' medication beliefs. **Conclusions:** Regardless of the type of the disease, patients with more positive beliefs about medication had higher adherence to medications as well; therefore, identifying the factors influencing patients' medication beliefs can improve their medication adherence and controlling of the disease.

Key words: Adherence to medication, chronic disease, medication beliefs, morisky

INTRODUCTION

Patients' adherence to medication has an important role in controlling the disease and is the key to treatment success. Studies have shown that as much as the diagnosis and prescription of the right medicines are important, proper use of medications and adherence to them are important as well.^[1] In this regard, it has been estimated that more than 30% of the prescribed medications is not taken by the American patients' as directed.^[2] Although, the rate of irrational prescription of medicines is very high, the improper use of medications is a waste of resources and loss of opportunity to recover.^[3] Studies have shown that taking the right medications and adherence to them are related to patients beliefs about their prescribed medications.^[4] Because of the progressive nature of many diseases, poor adherence to medication leads to rapid progression of the disease, reduced quality of life and treatment overall failure; therefore, proper adherence to medication

is very important for the patient to control the disease and prevent its progression or worsening.^[5] Proper treatment of disease reduces costs, lengths of hospitalization and disease complications. One of the main pillars of proper treatment is adherence to medication that relates to patients' medication beliefs. Patients' beliefs about medication have two aspects of beliefs in the necessity of prescribed medications and concerns about medication complications.^[5] The complications of medications affect patients' beliefs^[6] and lead to reduced motivation to use them properly.^[5,6] In addition, patients' adherence to medications may be influenced by the type of disease, cultural issues and some demographic factors.^[5,7] Very few studies have addressed this issue in Iran, and there is not

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enough understanding of the impact of patients' beliefs on their medication adherence. Accordingly, the present study is to determine the relationships between patients' beliefs about medications, their adherence to prescribed medications and some demographic factors.

METHODS

This descriptive cross-sectional study was conducted in 200 patients, who were randomly selected, in the Imam Khomeini Hospital of Khalkhal city in the year 2014. The inclusion criteria consisted of the use of at least two medications associated with the disease, at least 2 months of medications use and age range of 18–70. Patients participated with full knowledge and consent. The applied questionnaire consisted of three following sections:

First, demographic characteristics of the patients; second, The Beliefs about Medication Questionnaire (BMQ), which reviews patients' beliefs about their medications and has been validated in studies on patients' with chronic diseases.^[5,8] The BMQ consists of two sections: The first section includes 5 questions around patients' beliefs about the necessity of treatment for health care and the second section contains 5 questions regarding patients' concerns about medications.^[5,9] Each question is answered and scored based on the Likert scale (1 [completely disagree], 2 [disagree], 3 [not sure], 4 [agree] and 5 [strongly agree]) and the score range for each section is 5–25.^[10] Patients, whose scores in the necessity section are above 13, are considered to have a strong belief and those, whose scores in the concern section are above 13, are considered to have a great concern about the use of their medications. Finally, the difference in scores (necessity-concern) is considered as a criterion of the patients' beliefs about medication use; so that, higher scores are indicative of stronger beliefs about the usefulness of the medications,^[5,8] and third, The Morisky Medication Adherence Scale (MMAS) that evaluates patients' adherence to medications and has been validated in studies on patients' with chronic diseases. The MMAS consists of 4 questions, which are answered based on the Likert scale (4 [never], 3 [rarely], 2 [sometimes], 1 [often] and 0 [always]) and the overall score is a criterion to determine patients' adherence to medication. Therefore, those patients', whose scores are above 14, are considered as compliant with treatment and those, whose scores are below 14, are considered as noncompliant with their treatment.^[7,11,12] The data were analyzed using SPSS software (version 18-SPSS Inc., Chicago, IL, USA) with a significance level of $P > 0.05$.

RESULTS

About 42.5% of the participants were male and the rest were female (57.5%) with an average age of 33 ± 13.7 [Table 1].

Nineteen percent of the participants specified that they had no problem taking their medication as directed; but, 58.5% of the patients usually discontinued their medications

after feeling better. Concerning the demographic factors, the level of education had a significant relationship with drug discontinuation without counseling a doctor, the feeling of being worse by medication use was significantly higher in male patients and no significant relationship was observed between adherence to medication and age.

The results of the correlation tests [Table 2] showed that there were no significant relationships between gender or level of education and adherence to medication [Table 3].

DISCUSSION

Due to the chronic nature of some diseases, patients' nonadherence to medication can be very risky; therefore proper use of medication is in need of more attention.^[13] Moreover, the chronic diseases with different natures may influence differently the patients' beliefs about the necessity of directed medications, concerns about the complications and finally, adherence to medications.^[14]

The results of the present study are compatible with many other studies in which, it has been confirmed that some demographic factors such as age, gender and level of education can be influential in patients' adherence to their medications.^[1,2] For example, in some studies on the treatment tendency of patients'

Table 1. Demographic characteristics of the patients

Demographic characteristic		Number	Percent
Gender	Male	85	42.5
	Female	115	57.5
Educational level	Illiterate	5	2.5
	Primary school	13	6.5
	Middle school	11	5.5
	High school	82	41
	Academic education	89	44.5

Table 2: Relationships between gender or level of education and adherence to medication

Demographic characteristic		Number	Mean	Sd	P-Value
Gender	Male	85	42.5	2.1	0.24
	Female	115	57.5	2.1	
Educational level	Illiterate	5	2.5	1.2	0.8
	Primary school	13	6.5	2	
	Middle school	11	5.5	2	
	High school	82	41	2.2	
	Academic education	89	44.5	2	

Table 3: The results of correlation analyses to examine the relationships between demographic characteristics and adherence to medication

Adherence to medication	Gender		Educational level	
	Spearman	P-value	Cramer coefficient	P-value
	0.06	0.2	0.08	0.25

referring to pharmacies, the relationship between demographic characteristics of the patients' and their adherence to medication has been established.^[15,16]

In the current study, it was shown that gender has no significant relationship with patients' adherence to medication and both male and female patients' showed similar levels of medication adherence. However, this can be explained by the influence of other factors such as awareness level, women being affected by men and less financial independence of women compared with men. This lack of relationship between gender and adherence to medication has also been confirmed in a study concerning the role of beliefs in adherence to medication.^[5]

Regarding the age, no significant relationship was observed between age and adherence to medication. Though, this finding is not in line with another study by Gottlieb *et al.* (2011) on the relationship between age and adherence to medication in cardiac patients' in which, different age groups showed different levels of adherence to medication.^[17]

The results of this study also confirmed that stronger beliefs about the usefulness of the prescribed medications cause more adherences to medication and these two factors are directly related to each other. Many studies have introduced patients' beliefs about medications as one of the predictors of their level of adherence to medications and ultimate success of the treatment.^[5,18-21] Therefore, it can be concluded that the patient, as an active decision maker, should be considered first in the process of treatment.

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Conflicts of interest

There are no conflicts of interest.

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