Journal of Pharmaceutical Care
jpc.tums.ac.ir

# Relation Between Health Beliefs and Medications Adherence in Patients with Hyperlipidemia

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ARTICLE INFO

*Article type:*
Original article

*Keywords:*
Medication Adherence
Hyperlipidemia
Cardiovascular Diseases
Iran

ABSTRACT

***Background:*** Hyperlipidemia is one of the most important factors in progression of coronary heart diseases, because of the importance of lipid control for preventing heart disease; this study has done to explore the relation between health beliefs and medications adherences in patients with hyperlipidemia.

***Methods:*** This Correlation study has done in 82 patients with hyperlipidemia. For obtain information used a questionnaire with three parts; demographic characters, adherence to medications and health beliefs. The data analyzed by Descriptive and analytical statistical tests.

***Results:*** Findings same as some studies showed relationship between health beliefs and adherences to medications in patients with hyperlipidemia ($P<0.05$) with high health beliefs, adherence to medication increased.

***Conclusion:*** For increasing adherence to medication, some strategies must provide for self efficacy and educational programs must be done with relationship between patient and health provider. Notice to the importance of high cholesterol and its relation with heart disease will increase adherence to medication.

J Pharm Care 2013; 1(3): 95-99.

► Please cite this paper as:
Mardanian Dehkordi L. Relation Between Health Beliefs and Medications Adherence in Patients with Hyperlipidemia. J Pharm Care 2013; 1(3): 95-99.

## Introduction

Coronary heart disease (CHD) is the leading cause of Death and high cholesterol is among important amendable risk factors in prognosis and development of it. Evidence indicates that the risk of CHD events can be significantly reduced through modification of risk factors (1-3). Recent guidelines have clearly defined the importance of changing the lifestyle and treatment with prophylactic drugs (4). Former studies showed that patients' compliance to clinical cares in chronic diseases led to lower mortality and financial burden (5) Therefore, patients' medications compliance has been emphasized in long term care (6-7). Several studies concerning the level of medication compliance orders have been already conducted in Iran reporting a patients' low compliance (8-9).With regard to low compliance to medication orders in different diseases and the importance of patients' lipids control in reduction of CHD, this study was conducted to done to explore the relation between health beliefs and medications adherences in patients with hyperlipidemia. Because the result of this survey can help health plans, patient educators and health services researcher better target interventions aimed at improving patient adherence with pharmacological treatments for lowering cholesterol (10).

## Patients and Methods

This Correlation study was conducted on 82 hyperlipidemic patients, selected through convenient sampling and referring to clinics and hospitals affiliated to Isfahan University of Medical Sciences with at least 6 months history of hyperlipidemia and receiving current treatment with cholesterol-lowering drugs. To collect

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**Table 1**. Medication compliance components.

| Medication compliance components | Yes | | No | | Total | |
|---|---|---|---|---|---|---|
| | No. | % | No. | % | No. | % |
| Forgetting medications | 57 | 69.5 | 25 | 30.5 | 82 | 100 |
| Forgetting preparation of medications | 31 | 37.8 | 51 | 62.2 | 82 | 100 |
| Carelessness in time of use | 53 | 64.6 | 29 | 35.4 | 82 | 100 |
| Carelessness in correct dosage | 35 | 42.7 | 47 | 57.3 | 82 | 100 |
| Medication stop at recovery | 42 | 51.2 | 40 | 48.8 | 82 | 100 |
| Medication stop due to side effects | 30 | 36.6 | 52 | 63.4 | 82 | 100 |
| High cost of drugs | 7 | 8.5 | 75 | 91.5 | 82 | 100 |
| Not being sure about drug effect | 25 | 30.5 | 57 | 69.5 | 82 | 100 |
| Concerned about the side effect | 26 | 31.7 | 56 | 68.3 | 82 | 100 |
| Stop medication due to other reasons | 8 | 9.8 | 74 | 90.2 | 82 | 100 |

the data, the researcher referred to the related hospital managers after getting written research permission and a letter of introduction from Isfahan Nursing and Midwifery school, and eventually was referred to the related wards. She referred to the related hospitals and clinics on specific days of the week, detected the eligible subjects with the inclusion criteria and collected the data through questioning after explaining the research goal and getting their consent. The data collecting tool was a questionnaire used by Foley *et al.,* (10).

The questionnaire included three parts: part one was about demographic characteristics, part two contained 10 item about possible problems in the regular use of medications, in the form of yes/no questions (score zero was assigned to "yes" and score 1 was assigned to "no"). The scores of the questionnaire ranged 0-10. The level of compliance to medications was determined based on the possible problems in subjects' regular use. It was such that fewer problems in medication use (higher score) showed more compliance to medications, items were: Forgetting medications, Forgetting preparation of medications, Carelessness in time of use, Carelessness in correct dosage, Medication stop at recovery, Medication stop due to side effects, High cost of drugs, Not being sure about drug effect, Concerned about the side effect and Stop medication due to other reasons.

Part three contain 28 question on health beliefs in the form of Likert scale in 8 section: effectiveness of cholesterol-lowering drugs (contain 2 questions), association of high drug's dose and side effects (contain 6 questions), frustration with process of care (contain 2 questions), difficulty following advice / making change (contain 3 questions), doctor - patient communication (contain 3 questions), obtained education (contain 6 questions), risks of high cholesterol (contain 2 questions) and severity of high cholesterol (contain 4 questions). The questions were five point questions and were scored 1-5 based on the subjects' choice of strongly agree=5, agree=4, neither agree nor disagree=3, disagree=2 and strongly disagree=1. The scores of the questionnaire ranged 28- 140.

This questionnaire was translated after getting permission from MS Foley through an E-mail, and then content analysis was used for its scientific validity. It was carried out by distributing the questionnaire among 10 academic members of Isfahan Nursing and Midwifery School and some cardiologists to include their viewpoints in the questionnaire. Test retest was adopted to confirm its scientific reliability. This was achieved by giving the questionnaire to 10 hyperlipidemic patients with baseline characteristics identical to those of the subjects. Next, Pearson correlation coefficient was calculated twice between the obtained responses ($r = 0.86$).

Descriptive statistical tests (frequency, Mean, SD) were employed to calculate the score of possible problems in the regular use of medications and the score of health beliefs. Pearson correlation coefficients were adopted to investigate the association between score of medication compliance and score of health beliefs. Data are shown as Mean ± SD. P value < 0.05 considered as significant.

## Results

The average age of respondents was 62.6 ±12.63 and 61% were males, 34.1% of them were illiterate and 35.4% were homemakers. About 29% of participants used Gemfibrozil and Atorvastatin to control their blood lipid level. Most of the subjects suffered from underlying diseases (93.9%), and a high percentage (80.5%) had no problem with compliance to medications.

The mean score of compliance to medication (6.06 ± 2.48) shows that there were few problems in patients' compliance (Table 1). The mean score of health belief was high (92.47 ± 9.33) (Table 2).

The association between mean score of medications

**Table 2**. Mean of score of health belief and its component.

| Health belief components | Mean | SD |
|---|---|---|
| Effectiveness of cholesterol-lowering drugs | 6.22 | 1.39 |
| Association of high drug's dose and side effects | 18.40 | 2.00 |
| Frustration with process of care | 7.74 | 1.22 |
| Difficulty following advice / making change | 13.29 | 2.16 |
| Doctor- patient communication | 7.28 | 0.97 |
| Obtained education | 9.80 | 2.66 |
| Risks of high cholesterol | 10.33 | 2.23 |
| Severity of high cholesterol | 18.87 | 4.49 |
| Total score health belief | 92.47 | 9.33 |

**Table 3.** Pearson correlation coefficients between medications compliance and health belief.

| Health belief components | Compliance score | |
|---|---|---|
| | P-value | r |
| Effectiveness of cholesterol-lowering drugs | 0.11 | 0.14 |
| Association of high drug's dose and side effects | 0.02 | 0.21 |
| Frustration with process of care | 0.24 | 0.08 |
| Difficulty following advice / making change | 0.00 | 0.30 |
| Doctor- patient communication | 0.01 | 0.25 |
| Obtained education | 0.02 | 0.21 |
| Risks of high cholesterol | 0.04 | 0.19 |
| Severity of high cholesterol | 0.01 | 0.23 |
| Total health belief | 0.02 | 0.4 |

compliance and mean score of health belief and its competent are shown in Table 3. First the correlation between components of health belief and medication compliance was showed and indicated that patient belief about medication may influence their willingness to adhere to their medication however in this study the correlation between medications compliance and health belief about effectiveness of cholesterol-lowering drugs was not significant (P: 0.11), but there was a statistically significant correlation between medication compliance and health belief about association of high drug's dose and side effects (P: 0.02).

Also patient compliance with healthcare provider-recommended plays an important role in medications adherence as finding show the correlation between health belief about frustration with process of care and compliance was not significant (P: 0.24). But there was a significant association between mean score of compliance and mean score of health belief about difficulty following advice / making change (P: 0.00).

Quality of provider communication can impact on medication adherence as results show there was a statistically significant correlation between medications compliance and health belief about doctor - patient communication (P: 0.01).

Patient knowledge of medication play important role in medications adherence however There was a statistically significant correlation between health belief about obtained education and medications compliance (P: 0.02) .also There was a statistically significant correlation between mean score of health belief about risks of high cholesterol and mean score of compliance (P: 0.04) .

Attitude about cholesterol may affect the motivation to maintain a drug treatment. There was a significant association between mean score of health belief about severity of high cholesterol and mean score of compliance (P: 0.01) too. Finally finding showed statistically significant correlation between mean score of medications compliance and mean total score of health belief (P: 0.02) i.e. higher score of health belief members increased the compliance.

## Discussion

The results show that most of hyperlipidemic individuals had no problems with their compliance to medications and followed their medication diet. Although some other studies report consistent findings on compliance to medication (11) more studies report lack of compliance to medication among the subjects (12-14).

The results show that there was significant associations between compliance mean score and health belief, as higher level of health belief increased the compliance. Other studies also indicate that health belief has important role in compliance (15-19).

Finding showed relation between health belief components and compliance to medication: so there was an association between patients' belief about effect of drug and adherence but it isn't significant. Some studies are consistent with this finding that patient belief about effect of drug has important role in adherence, so the patients who have lower belief about effect of drug don't tolerate side effect of drug (20, 21). In the other word patient who isn't sure about function of drug, has less motivation for using it.

In this study there was significant association between patient perception of side effect and compliance to medication. Some study results are in line with this finding and show patient perception of side effect has important role in compliance (20, 22-26). Patients who believe in the association of high dose of cholesterol medications and adverse event may be less likely to adhere to their medications (10).

Based on the results medication adherence has been linked to frustration with process of care. Other studies show inability of patients for caring themselves, perceived barriers and difficulties may influence patient motivation to adhere to medication (10) and decrease compliance (27). Moreover providing empowerment program (28) self efficacy (29) health promotion and Follow the recommendation (30) due to increase compliance.

In this study compliance to medication has significant association with communication between patient and physician. Patient satisfaction of physician has significant association with adherence to medication. That is related with patients' expectation for obtaining information, emotional support, assessment and treatment (31). Ability of doctor to listen, explain and spend enough time with the patient, may influence the patient understanding and acceptance of treatment plan and impact the level of patient knowledge about cholesterol and medications used to lower cholesterol (32). Some studies indicate that patients who had not opportunity to ask questions are at risk of non adherence (33). Effective communication between patient and health provider and their agreement on cure, impact on compliance, self care skills and outcome (34).

Finding showed compliance to medication has significant association with received information about high cholesterol. Some studies are consistent with this finding indicate that receiving information lead to enhance knowledge and improve lipid-control behaviors (35-37). However some studies are not consistent with this finding (33, 38). In some others, information only increase adherence to blood pressure control drugs but has not effect on adherence to lipid and glucose control drugs (39). However providing information about drug and cure is very important (40) and due to modify risk factors. Based on results patients with risk factors have more attention. So the patient belief about risks of high cholesterol and severity of high cholesterol have significant association with compliance to medication and reinforcement patients believe about this topic due to more adherence. Other studies consistent with this topic and reported patient believe about important role of cholesterol in incidence of heart disease will increase patient motivation for adherence to medication (17). Patients who do not understand the consequences of high cholesterol, they may be less likely to believe that disease is serious and that it requires aggressive treatments (23, 27).

## Conclusion

The results show high compliance to medication among hyperlipidemic patients and the association between the level of compliance and health believe. So for increase adherence to medication, educational plan should be done with suitable communication between health provider and patients and emphasis on important role of cholesterol in incidence of heart disease and importance of adherence.

## Acknowledgments

The researcher greatly acknowledges Vice Chancellor for research in Isfahan University of Medical Sciences, who sponsored this research project, as well as all the subjects who cooperated with the researcher.

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