

Beliefs, perceptions and practices about asthma among Iranian asthma patients

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المعتقدات والمدرجات والممارسات حول الربو بين المصابين به في إيران
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الخلاصة: أجرى الباحثان مقابلات لـ 123 مريضاً في قسمين من أقسام العيادات الخارجية في مستشفيات طهران بغرض تقييم المعتقدات والمدرجات حول مختلف جوانب حالات المرضى الذين شخّصت لديهم الإصابة بالربو. ولم يتذكر معظم المرضى أي سوابق مرضية للربو. وكان الكثير ممن لديه سوابق استخدام المنشقات الفموية لم يستخدموها بشكل منتظم (41.9٪)، وكان السبب الرئيسي الذي أبلغوا عنه أنهم لم يشعروا بالحاجة لاستخدام الأدوية في الفترات التي لا تظهر فيها الأعراض. ولم يوضح سوى 32 مريضاً (30.5٪) الأسلوب الصحيح لاستخدام المنشقة الفموية. ويحتاج مرضى الربو إلى المزيد من التثقيف حول الوقاية من الأعراض ومكافحتها. ومن العوامل الأخرى التي تثير القلق عدم اكتراث الأطباء بالمبادرة العالمية لإعداد دلائل إرشادية لتدبير الربو.

ABSTRACT To evaluate the beliefs and practices of patients diagnosed with asthma about various aspects of their condition we interviewed 123 patients attending 2 outpatient departments of hospitals in Tehran. Most of the participants did not recall their past medical history of asthma. Many patients with a history of using oral inhalers did not use these regularly (41.9%); the major reason reported was feeling no need to use medication during symptom-free intervals. Only 32 (30.5%) patients demonstrated the correct technique for using their oral inhaler. Patients with asthma need more education about prevention and control of symptoms. Neglect by physicians of the Global Initiative for Asthma management guidelines was another major concern.

Croyances, opinions et pratiques relatives à l'asthme parmi les sujets asthmatiques iraniens

RÉSUMÉ Afin d'évaluer les croyances et les pratiques des asthmatiques concernant différents aspects de leur maladie, nous avons interrogé 123 patients fréquentant deux services de consultations externes d'hôpitaux de Téhéran. La plupart des participants ne se souvenaient pas de leurs antécédents d'asthme. Bon nombre de ceux qui utilisaient des inhalateurs ne le faisaient pas régulièrement (41,9 %) ; la principale raison invoquée était qu'ils n'éprouvaient pas le besoin de prendre des médicaments pendant les intervalles asymptomatiques. Seuls 32 (30,5 %) patients appliquaient la bonne technique pour utiliser leur inhalateur. Les asthmatiques doivent être mieux informés sur la prévention et la suppression des symptômes. La non-observance par les médecins des principes directeurs en matière de prise en charge de l'asthme mis au point par l'Initiative mondiale pour l'asthme (GINA) était également très préoccupante.

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Introduction

Asthma affects an estimated 300 million people worldwide, not only impinging on patients' quality of life but also accounting for approximately 1 in every 250 deaths and 15 million disability-adjusted life years lost per year [1]. In recent years the prevalence of asthma has shown a steady increase, with a corresponding increase in its social and economic impact [2].

Asthma care requires a partnership between the patient and the health care professional [2]. Successful management of asthma requires attention not only to observable behaviour but also to the underlying attitudes and beliefs which drive that behaviour [3]. It is well accepted that patients' views should be taken into account during medical decision-making, particularly in diseases such as asthma [4]. In addition, patients' beliefs about their illness play a key role in determining their adherence to treatment [5], which is an important aspect of self-management [6].

Only a few studies have attempted to investigate asthma patients' beliefs in the Islamic Republic of Iran, so the objective of this study of outpatients in Tehran was to evaluate the beliefs, perceptions and practices of asthma patients about various aspects of their condition.

Methods

Study design and population

A convenience sample of 123 patients with physician-diagnosed asthma were selected from the outpatient departments of 2 tertiary hospitals (Milad and Fayaz-Bakhsh hospitals) in Tehran, Islamic Republic of Iran from June 2005 to September 2005. All of those approached agreed to take part and were interviewed.

The inclusion criteria were age above 16 years and history of asthma and the exclusion criterion was a history of chronic respiratory diseases other than asthma. Asthma was diagnosed by a pulmonologist, according to a combination of both clinical and spirometry (reversibility to bronchodilators) criteria. Asthma severity was defined based on the Global Initiative for Asthma (GINA) guidelines [2] and patients' clinical and/or spirometry parameters.

Data collection and analysis

Data were collected via a questionnaire that was designed to examine patients' perceptions of asthma management in light of the revised asthma management guidelines published by GINA in 2004 [2]. The survey questions were not validated. Patients' demographic data, asthma severity and history, medical history, history of prescribed medication for asthma and/or other chronic diseases and smoking status were recorded. The questionnaire included both closed and open-ended questions. The second author conducted all the interviews.

The answers to open-ended questions were read several times to become familiar with the data. After highlighting the more common answers, all the data were grouped for analysis. *SPSS*, version 10.0.5 software was used for statistical analysis.

Results

All 123 patients were interviewed. Mean age was 46.46 (standard deviation 14.86; range 16–83) years. The demographic data of participants are shown in Table 1. About three-quarters of the patients had less than high school education, more than half had grade 1 and 2 asthma and about one-quarter were active or passive smokers.

Table 1 Demographic data of asthma patients (n = 123)

Variable	No.	%
Age (years)		
Mean (SD)	46.46 (14.86)	
Min-max	16-83	
Sex		
Female	73	59.3
Male	50	40.7
Literacy/education level		
Illiterate	27	22.0
Low literate	12	9.8
Elementary school	26	21.1
Guidance school	27	22.0
High school	23	18.7
College	8	6.5
Length of time with diagnosis of asthma (months)		
Mean (SD)	84.42 (102.13)	
Min-max	0-600	
Employment		
Employed	66	53.6
Unemployed ^a	57	46.4
Immigration status		
Immigrant	81	65.9
Native	34	27.6
Living in other cities	8	6.5
Smoking status		
Active	7	5.7
Passive	25	20.3
Non-smoker	73	59.3
Ex-smoker	18	14.6
Disease history		
Family history of asthma	51	41.5
History of other chronic disease	39	31.7
History of taking medication for other chronic disease	42	34.1
Asthma grade		
1	34	27.6
2	43	35.0
3	40	32.5
4	6	4.9

^aWomen who were housekeepers were categorized as unemployed.

SD = standard deviation.

Triggers for asthma

Patients were asked what factors were triggers for their asthma. Most of the patients (108, 87.8%) were familiar with the concept of triggers for asthma, 7 (5.7%) patients mentioned no triggers for the disease and 8 (6.5%) were uncertain about the triggers. Environment, smoking and air pollution were perceived as major trigger factors. The second major trigger factor was nutritional. None of the participants mentioned drugs as an asthma trigger. The less commonly reported triggers were exercise, infection and emotional and occupation factors. Despite knowledge of active and passive smoking as triggers of asthma, 7 (5.7%) patients were active smokers and 25 (20.3%) were exposed as passive smokers.

Physician visits and medication use

A majority of patients (74, 60.1%) had only partial or no recall about their last visit to a physician. Of 97 patients who recalled their last physician visit completely or partially, 16 (16.5%) had made at least 1 visit to a general practitioner (GP) for their asthma.

A number of patients had no recall (19, 15.4%) or only partial recall (73, 59.3%) of their history of medication use (Table 2). There was no relation between asthma grade and recollection of past medication history among patients who had a history of medication use ($P = 0.205$). The most frequently reported medications were various types of metered dose inhaler (MDI), theophylline, antibiotics, antihistamines and expectorants.

Using metered dose inhaler drugs

Some patients (18, 14.6%) had not been prescribed any kind of oral inhaled medication. Of these, 11 were new cases of asthma who had made no previous visits to a physician, but the other 7 had had the diagnosis

Table 2 Patients' recall of past medication history in relation to asthma grade (n = 123)

Asthma grade	Recall of medication use							
	No recall		Partial recall				Complete recall	
	No.	%	No.	%	No.	%	No.	%
1	1	0.8	19	15.4	8	6.5	6	4.9
2	9	7.3	23	18.7	7	5.7	4	3.3
3	8	6.5	28	22.8	4	3.3	0	0.0
4	1	0.8	3	2.4	2	1.6	0	0.0
Total	19	15.4	73	59.3	21	17.1	10	8.2

of asthma for a while. These 7 patients had asthma grade 2 or more. The 105 remaining patients who had a history of using oral inhalers were asked if they were prescribed oral inhalers at every consultation for asthma: 15 of them (14.3%) did not remember, 26 (24.8%) did not have an inhaler prescription at every visit and 64 (60.9%) were always prescribed oral inhalers.

Of 105 patients using oral inhalers, 44 (41.9%) did not take their medication as prescribed. Feeling that there was no need for medication during symptom-free intervals was the most commonly given reason for non-compliance. Drug side-effects were the second reason. Other reasons were fear of dependency and pessimistic beliefs about medicines.

After these questions, the patients were asked to show and explain how they

used their metered doses inhalers. Only 32 (30.5%) patients used their oral inhaler correctly; 73 had some problems in using their inhaler.

Managing asthma attacks

Half of the patients (62, 50.4%) reported that they did not suffer from asthma attacks; 30 of these had grade 3 or 4 asthma (Table 3). The remaining 61 patients were asked about how they managed their asthma attacks. Most of them (60, 98.4%) were familiar with using the "blue spray" (salbutamol inhaler) at the time of attack but they also used other treatment methods (51, 83.6%); for example making an emergency hospital visit, getting in a comfortable position and breathing fresh air. One patient did not use any treatment at the time of asthma attacks.

Table 3 Patients' reports of previous asthma attacks in relation to asthma grade (n = 123)

Asthma grade	Ever had asthma attack				Had asthma attack in previous year			
	Yes		No		Yes		No	
	No.	%	No.	%	No.	%	No.	%
1	10	29.4	24	70.6	3	8.8	31	91.2
2	21	48.8	22	51.2	11	25.6	32	74.4
3	27	67.5	13	32.5	23	57.5	17	42.5
4	3	50.0	3	50.0	3	50.0	3	50.0
Total	61	49.6	62	50.4	40	32.5	83	67.5

Exercise

Almost half the patients (58, 47.2%) believed that exercise affected their asthma; 42 (34.1%) believed that exercise improved their asthma and 16 (13.0%) that it exacerbated their disease. Among those who believed that exercise improved their condition, 24 took regular exercise and 18 did not, and among the patients who reported exacerbation of asthma after exercise, 3 took regular exercise and 13 did not. A total of 44 patients (35.8%) took regular exercise.

Nutrition

A majority of participants (93, 75.6%) reported food-induced asthma. Nuts (55, 44.7%), fried foods (41, 33.3%) and sweets (37, 30.1%) were the most frequently reported by participants as asthma triggers. Many participants (75, 61.0%) reported overeating as an asthma trigger. Only 18 patients (14.6%) reported feeling better by consuming some kind of food.

Dietary advice had been offered to 66 (53.7%) participants. Of these, 52 had tried to modify their diet as advised, while 56 had modified their diets independent of dietary advice. Physicians were the most common source of dietary advice (61, 92.4%). Other sources were patients' family and relatives.

Learning about asthma

All the participants were asked about what effect having more knowledge about asthma would make to their condition. A majority (76, 61.8%) agreed that learning about asthma would improve their condition, 10 (8.1%) believed it would not have any effect and 37 (30.1%) believed that having better knowledge and learning would have a partial effect. Only 19 (15.4%) participants, however, had tried to learn more about their condition.

Alternative medicine

A total of 74 patients (60.2%) had been advised to use herbal medicines and 58 (47.2%) had used them. Of these patients 28 (48.2%) mentioned beneficial effects after use. The most common advised drugs were: pennyroyal (*Mentha pulegium*), borage (*Echium amoenum*), quince seed (*Cydonia oblonga*), basil seed (*Ocimum basilicum*), flixweed (*Descurainia sophin*), plantain seed (*Plantago major*), linseed (*Linum usitatissimum*) and thyme (*Thymus vulgaris*), although 32 participants did not know the names of the herbal medicines. Pennyroyal and thyme were most frequently reported as effective (by 17.6% and 16.2% of users respectively).

Most of the participants (91, 74.0%) had not used any vitamin or mineral supplements. All of the participants were asked about the effect of supplements on their condition; 102 (82.9%) did not have any ideas about the subject, 13 (10.6%) believed that supplements had no effect on their disease and only 8 patients (6.5%) believed that supplements improved their condition.

Discussion

Because patients' beliefs and practices play a role in understanding, defining and responding to illness, it is important to understand that such beliefs may vary between ethnic groups. Patients often use alternative medicines and practices alongside conventional medical ones, and clinicians should be aware of these in order to optimize health education and clinical management [7].

In spite of knowledge about active and passive smoking as triggers of asthma, 5.7% of our patients were active smokers and 20.3% passive smokers. An active antismoking education campaign is a useful tool for preventing exacerbation of asthma

[2,8]. Due to the important role of air pollution in the control and exacerbation of asthma [9] and the high air pollution in Tehran and other large cities of the Islamic Republic of Iran, control of this problem is a major factor in control of asthma or exacerbation of asthma attacks.

Asthma is a chronic disease and patients need regular supervision, monitoring and support by health care professionals who are well-informed about asthma [2]. According to Hertzman et al. [10], all health carers at the primary care (nurses and GPs) and higher stages of the health care system should be involved in the care of asthma patients. It has been shown that the participation of GPs in managing asthma leads to better asthma control and improved asthma care [11]. Unfortunately only a minority of our patients made regular GP visits and the rest of the patients were treated randomly by various physicians. This can be an important factor in frequent exacerbations of asthma and ever higher mortality due to uncontrolled asthma [11]. We suggest that an asthma control management plan should be integrated into health system programmes similar to those for chronic diseases such as tuberculosis [12].

Educating patients to improve their self-management skills is the cornerstone of good asthma care [13,14]. In our study, there was no difference in recall of past medication history between different asthma grades and most of the patients only partially remembered their past medication history. In addition, only about one-third of the patients had the correct technique for using their MDI drugs. Thus it seems that all asthma patients, regardless of their asthma severity, need more education to improve their self-management skills. The patients' negative beliefs about MDI drugs must also be considered a major part in their education as 35.7% of our patients

were irregular users of MDI drugs due to these beliefs.

The medicines most frequently prescribed to our patients were theophylline, antibiotics, antihistamines and expectorants. This differs from GINA guidelines: theophylline is not the first-line drug for asthma and has side-effects and the others have no place in asthma management [2]. In addition, although MDI drugs are the best medication for asthma management [2], 26 participants did not have a regular prescription for MDI drugs and 7 patients with grade 2 or greater asthma were not prescribed any MDI drugs from the beginning of their diagnosis.

Educational programmes should also target physicians. A study in 2004 reported the lack of universal definitions among physicians, especially between GPs and specialists, regarding essential notions of asthma care, such as promoting asthma control or avoiding exacerbation [15].

With increasing asthma grade, there was an increase in the rate of patients who suffered attacks. Around half the grade 3 and 4 asthma patients were uncontrolled. This poor control of severe asthma among our patients requires that more attention be paid to management of these patients.

It was believed by 13.0% of the patients that exercise exacerbated their disease. Although exercise has been reported to be a trigger, it has been shown that short episodes of exercise may be beneficial for people with asthma [16]. Even professional athletes with asthma can exercise regularly, with accurate diagnosis and classification and appropriate preventive measures and pharmacological intervention; thus it is possible for athletes to participate in the sport of their choice in nearly all situations [17].

A majority of patients reported food-induced asthma. Since existing data about the effect of food and nutrients on asthma are

controversial [18], more detailed and interventional studies are needed to evaluate this kind of association with precise measuring of food and nutrient intake and asthma status to ascertain whether any modifications of food intake could be beneficial in the prevention or amelioration of asthma.

A high proportion of patients had been advised to take herbal medicine. There are some studies evaluating the effect of herbal medicine in asthma, but there is a general lack of scientific data to support the use of these herbs in asthma [19]. As half of our patients using herbal medicine reported relief from symptoms, it emphasizes the need for evaluation of these therapies in proper controlled trials.

Few patients had used vitamin or mineral supplements. There is some epidemiological evidence about the effect of vitamins and minerals in asthma, but the results of controlled trials are controversial [19–21], so more controlled trials are needed to evaluate the effect of supplements in asthma.

We are aware that our study has some limitations. All of the participants were chosen from 2 outpatient clinics of tertiary hospitals, where most of the subjects had low socioeconomic status. Furthermore, all of the interviews were conducted by the first author of the study. This might result in a bias by leading the patients to certain answers. For future research, to reduce the sample bias, more community-based investigations should be undertaken to represent the full spectrum of people with asthma.

In addition, more standardized questionnaires should be used to assess patients' knowledge, attitude and behaviour in order to assess the relation between these data and asthma control.

Improvement of the quality of care in asthma requires a comprehensive knowledge of patients and the management of their asthma. It has been suggested that patients are relatively unaware that most of their asthma-related problems are due to inadequate control, and that more appropriate behaviour toward asthma control therapy could improve this situation [15]. Therefore, it had been suggested that better patient education is necessary in order to improve the management of asthma. Previous studies have reported that better knowledge of the disease by patients improved adherence to treatment and changed their perception of the disease [22]. In addition, when patients were better educated about their disease they were less likely to experience asthma-related adverse events. Education should stress the importance of regular use of asthma control medications. Explanation and demonstration of how to use inhaler devices should not be overlooked [15].

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