

# Evaluation of Treatment Satisfaction in Asthmatics

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## Abstract

**Aim:** Medication compliance is essential in controlling symptoms in chronic diseases such as asthma. The aim of this study was to evaluate treatment satisfaction in asthmatics who have been regularly receiving one or more inhaled devices. **Methods:** Satisfaction of treatment was evaluated by a questionnaire consisting of 4 categories (effectiveness, ease of use, burden of medication, side effects) and 26 statements. Each comment was graded from 1 to 7, where 1 indicated complete disagreement with the statement and 7 indicated complete agreement. **Results:** Sixty-seven patients completed the questionnaire. Fourteen of the patients were male and 53 were female and the mean age was  $40.8 \pm 13.7$  years. Forty-nine (73%) of the patients were receiving single inhaled device, 18 were receiving two inhaled devices (26%) and 2 were using additional oral theophylline. Mean satisfaction scale was  $5.8 \pm 2$  for effectiveness of asthma medication,  $6.3 \pm 1.7$  for ease of use,  $3.9 \pm 2.6$  for burden of medication and  $3.1 \pm 2$  for side effects. **Conclusion:** In this study, mean values for effectiveness and ease of use were found to be higher and burden of asthma medication and concern regarding side effects were found to be lower. This data suggests that satisfaction with treatment was good in asthmatic patients who were regularly and closely followed in the asthma outpatient clinic.

**Keywords:** asthma, nebulizers, treatment satisfaction

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## INTRODUCTION

Asthma is a chronic disease requiring prolonged treatment. Medication compliance is essential in controlling symptoms and exacerbations [1]. Asthma medications can be administered in different ways; however, the inhaled route of administration is preferable because it is more effective and has less systemic side effects [2,3]. Medication compliance is especially important with inhalation devices [4].

Compliance is shown to be affected by several factors, including the route of administration, frequency of dosing, features of the inhaler device, the patient's psychosocial status, expectations of treatment, cultural beliefs and consistent instruction of inhalation technique [2,5]. Satisfaction with medical care received also has an important influence on compliance with therapy [6,7]. If a medication can control symptoms, is easy to use and has fewer side effects, it is

accepted by the patients; these items seem to be the determining characteristics of satisfaction with a medication.

Previous studies investigating treatment satisfaction have generally focused on patient preference for the route of administration or various presentations of inhaled drugs [8-10]. There are a few studies regarding treatment satisfaction using validated questionnaires [7,11,12]. Recently, Campbell et al. developed an instrument to measure overall satisfaction with inhaled asthma treatment [13]. This questionnaire evaluates all determining items of satisfaction with a medication as described above.

In the present study, our aim was to evaluate patient satisfaction with inhaled asthma treatment using the questionnaire developed by Campbell et al. This study was conducted in an asthma outpatient clinic and included closely followed stable asthmatic patients.

## METHODS

### Study Population

Patients who were defined as asthma according to the Global Initiative for Asthma (GINA) guidelines and closely followed-up in the asthma outpatient clinic were included in the study. All patients were stable asthmatics with different disease severity and were receiving one or more inhalation devices for at least three months. Subjects who had suffered a respiratory tract infection or exacerbation of airway disease within the previous eight weeks and those who were receiving asthma medication orally or inhaled treatment irregularly were excluded from the study.

### Questionnaire

The "Satisfaction with Inhaled Asthma Treatment Questionnaire" (SATQ) developed by Campbell et al. was used. Backward-forward translation was used to translate the questionnaire from English to Turkish. The questionnaire consisted of 26 statements covering four categories, including effectiveness (8 items), ease of use (7 items), burden of asthma medication (6 items) and side-effects and concerns (5 items). Each comment was graded from 1 to 7, where 1 indicated that the patient completely disagreed with the statement and 7 indicated complete agreement.

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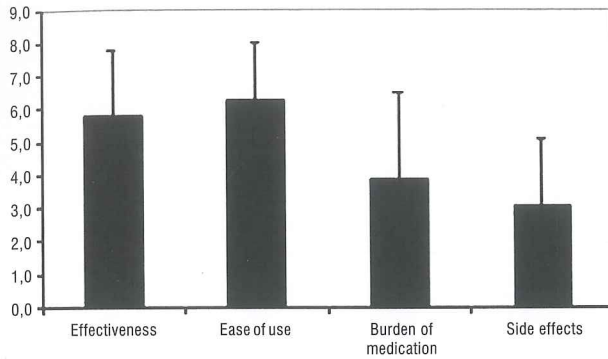


Figure 1. Satisfaction scales for each component (mean  $\pm$  SD)

### Statistical Analysis

All statistical analysis was performed on SPSS for Windows version 10.0. Data was expressed mean  $\pm$  SD. For each statement, complete agreement and disagreement were expressed as % of total patients. Between group differences were analyzed by non-parametric Mann Whitney-U test. A p value less than 0.05 was considered as statistically significant.

### RESULTS

Sixty-seven patients completed the questionnaire. Fourteen of the patients were male and 53 were female, and the mean age was  $40.8 \pm 13.7$  years. Thirty-five patients (52.2%) were described as mild persistent, 30 (44.7%) as moderate persistent and two (2.9%) as severe persistent. Forty-nine (73%) of the patients were receiving single inhaled device, 18 two inhaled devices (26%) and two were using additional slow-release theophylline orally.

Mean satisfaction scale was  $5.8 \pm 2$  for effectiveness of asthma medication,  $6.3 \pm 1.7$  for ease of use,  $3.9 \pm 2.6$  for burden of medication and  $3.1 \pm 2$  for side effects (Figure 1). The detailed statements and mean  $\pm$  SD values for each component are given in Table 1.

In the effectiveness section, the comment "I would recommend my inhaler to other people with asthma" was found to score lower ( $3.18 \pm 2.7$ ), indicating patient disagreement with the item. In the side effects and concerns section, the comment "My asthma medication makes my throat dry" was scored higher ( $4.3 \pm 2.7$ ).

No significant difference was found with regard to any of the components between the patients receiving single or two inhaled devices ( $p > 0.05$ ).

### DISCUSSION

In this study, we evaluated patient satisfaction with asthma medications by using a questionnaire recently developed by Campbell et al. Overall satisfaction scale was found to be higher in the effectiveness and ease of use sec-

tions and lower for burden of asthma medication and concerns regarding side effects sections. These findings suggest that patients who were closely followed-up in the asthma outpatient clinic were satisfied with their medical care.

Dissatisfaction with medical care received has been shown to be reflective of poor disease outcome and problems with the process of care [14]. Approximately 30 to 85% of asthmatics reported dissatisfaction with their current treatment, and this ratio was found to be higher in patients with asthma control problems, patient-health care provider communication problems or belief in medication problems [12,15]. In previous studies investigating patient satisfaction, one or two questions were used and a satisfaction scale was formatted based on the patient answer [9,10,14]. There are few validated questionnaires measuring patient satisfaction [11,12,16,17]. Campbell et al. developed a specific questionnaire to measure the overall patient satisfaction with inhaler treatment. We have demonstrated that treatment satisfaction was good in our patients and the questionnaire was easy to apply in routine clinical practice. As this study was performed in an asthma-specific outpatient clinic where the physician had at least 30 minutes for anamnesis and physical examination for each patient, our opinion regarding application of the questionnaire in routine clinical practice is not valid for a general outpatient clinic. We noted higher satisfaction values in our patients and thought that these values may be related to management of patients in a disease-specific outpatient clinic. The positive effect of asthma-specific outpatient clinics on patient compliance and satisfaction has been reported previously [18]. Future controlled studies which include patients from both asthma-specific and general outpatient clinics are needed to confirm these results.

In this study, we noted that responses to some statements from the sections concerning "effectiveness" and "side effects and concerns" were significantly different from the mean values of these sections. In the effectiveness section, while the mean satisfaction scale was  $5.8 \pm 2$ , the statement, "I would recommend my inhaler to other people with asthma" was scored low, at a value of  $3.18 \pm 2.7$ , indicating patient disagreement with the item. This data suggested that although patients found their medication effective and felt its significance in control of their asthma, they would not recommend it to other patients and were probably seeking another treatment or cure of asthma. In the side effects and concerns section, a higher value was determined for the comment, "My asthma medication makes my throat dry", which might suggest that this side effect was the most common in our study population.



**Table 1.** Mean satisfaction values of each statement and percentage of patients who completely agree and disagree with the statement

	Mean $\pm$ SD	% of pts completely agree	% of pts completely disagree
<b>Effectiveness</b>			
My asthma medication gives me the confidence I need to get through the day	6.3 $\pm$ 1.5	71.4	4.7
I feel in control of my disease	6 $\pm$ 1.6	66.6	4.7
When I take medication, I feel confident that my asthma symptoms will be controlled	6.4 $\pm$ 1.4	81.8	4.5
I would feel happy to continue my current asthma medication	6.1 $\pm$ 1.8	72.7	9
I would recommend my inhaler(s) to other people with asthma	3.18 $\pm$ 2.7	23.8	52.3
My asthma medication gives me relief that lasts	6.1 $\pm$ 1.5	60	5
My inhaler(s) helps me feel in control of my asthma symptoms	6.2 $\pm$ 1.8	81.8	4.5
My asthma medication is very effective	5.8 $\pm$ 1.8	54.5	9
<b>Ease of use</b>			
I always have the right asthma inhaler with me when needed	6.6 $\pm$ 1.2	90.4	4.7
I rarely leave home without taking my inhaler(s) with me	4.9 $\pm$ 2.6	47.6	28.5
It is easy to remember to take my asthma medication	6.1 $\pm$ 1.5	60.8	4.3
I feel confident in using my inhaler(s)	6.5 $\pm$ 1.3	76	4.7
Keeping track of my asthma medication is easy	6 $\pm$ 1.8	69.5	4.3
It is easy to find the right inhaler when needed	6.7 $\pm$ 1.2	95.4	4.5
It is easy to fit my asthma medication into my everyday life	6.3 $\pm$ 1.3	81.8	4.5
<b>Burden of asthma medication</b>			
Carrying my asthma inhaler(s) can be cumbersome (e.g. size/weight)	3.5 $\pm$ 2.6	23.8	38
I wish my asthma medication was easier to take	3.9 $\pm$ 2.7	28.5	42.8
I sometimes leave home with the wrong inhaler	2 $\pm$ 2.2	13.6	81.8
Using my asthma inhaler(s) in public is embarrassing	3.6 $\pm$ 2.6	20.8	45.8
My asthma inhaler(s) fits easily in my purse or pocket	5.8 $\pm$ 1.9	57	9.5
Using more than one inhaler can be a hassle or a problem	4.2 $\pm$ 2.6	30	35
<b>Side-effects and concerns</b>			
I worry that my inhaler is not giving me enough medication	2.2 $\pm$ 2	9.5	66.6
I worry that I am not taking the right medication for my symptoms	2.2 $\pm$ 2	9.5	76
My asthma medication leaves a bad taste in my mouth	3.3 $\pm$ 2.4	19	47.6
My asthma medication affects my voice	3.3 $\pm$ 2.5	22.7	50
My asthma medication makes my throat dry	4.3 $\pm$ 2.7	40.9	36.3

\*pts: patients

Satisfaction scale was over 6 in "ease of use" section and over 3 in "burden of asthma medication" section, suggesting that patients felt that inhaler(s) use was easy, they were confident in its effectiveness, and there were no problems with carrying the inhaler. As none of the patients in our study was using metered dose inhaler (MDI) with a spacer, this data was valid only for dry powder inhalers (DPI). There was no difference in satisfaction scales between patients receiving one or two inhalers or between the presentations of DPIs (discus, turbuhaler and inhalation capsules).

Since there is no previous study using SATQ to assess satisfaction with a medication, it is difficult to compare our results with previous investigations. In a recent study, Weiss et al. evaluated patient satisfaction using a questionnaire containing some similar items with SATQ [19]. That questionnaire consisted of 17 items and four subscales in-

cluding side effects, knowledge/ease of use, convenience and overall satisfaction. The items used to assess effectiveness in SATQ are quite similar to those in the overall satisfaction section in the Weiss study. However, they graded the items from 1 to 6, with a higher score reflecting greater satisfaction. They determined that satisfaction scales for overall satisfaction and ease of use were greater than 5; these results were similar with our findings.

Narayanan and coworkers investigated patient satisfaction with montelukast [14]. They graded overall satisfaction with a scale from 1 to 7 using a single question, "How satisfied were you with your asthma controlled medication?" and reported a significant increase in the satisfaction scale from 4.21 to 5.09 with montelukast. We think that determination of satisfaction with a medication is too complicated to assess with only one question. There are too many components affecting patient satisfaction with



received medical care and all of these items require evaluation with valid questionnaires. Use of standard questionnaires will also facilitate accurate comparison of results.

There are some potential limitations of this study. First, there is no validation of the Turkish-English translation; we performed the backward-forward translation in order to eliminate this language limitation. The second limitation is the small number of patients, i.e. a small study population, and the last is the effect of the disease-specific outpatient clinic. Future studies including more patients are needed to validate this questionnaire for use in general outpatient clinics.

Previous studies performed in Turkey have generally investigated compliance problems with inhaled devices; patient satisfaction with treatment has not yet been determined [4,20,21]. This might be due to lack of valid questionnaires in Turkish to measure patient satisfaction. As a result, in spite of the limitations of the study discussed above, this investigation demonstrated that treatment satisfaction was good in patients with asthma who were closely followed-up in the asthma outpatient clinic. Our study results may be accepted as preliminary data which point out the requirement for validated questionnaires in Turkish to measure patient satisfaction with asthma treatment.

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