

Subjective health and impaired quality of life due to allergies in a representative population survey

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Received March 26, 2007; accepted March 30, 2007

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Subjektive Gesundheit und Beeinträchtigung der Lebensqualität durch Allergien in einer repräsentativen Bevölkerungsbefragung

Zusammenfassung. Ziel: Ziele der Auswertung waren eine Erhebung der Einbußen der Lebensqualität bei Patientinnen und Patienten mit verschiedenen allergischen Erkrankungen sowie eine Quantifizierung der Gesundheitswahrnehmung bei Allergikerinnen und Allergikern verglichen mit Personen ohne Allergien.

Methode: Als Datenquelle diente der Wiener Gesundheits- und Sozialsurvey, eine repräsentative Querschnittsstudie, die von der Stadt Wien in Auftrag gegeben wurde.

Ergebnisse: 18,7 % der Patientinnen und Patienten, die im Jahr vor der Befragung unter einer Allergie litten gaben an, durch die Erkrankung "sehr beeinträchtigt" gewesen zu sein, 30,0 % fühlten sich "ziemlich beeinträchtigt", 42,4 % "etwas beeinträchtigt" und 8,9 % "gar nicht beeinträchtigt". Frauen fühlten sich durch die Allergie öfter "sehr beeinträchtigt" als Männer (21,8 % vs. 15,2 %, $p < 0.05$). Auf einer Skala von 0 bis 100 (0 = denkbar schlechtest; 100 = denkbar bester Gesundheitszustand) bewerteten Patientinnen und Patienten mit Allergien im Vergleich zu Personen ohne Allergien ihre Gesundheit deutlich als schlechter (71,7 vs. 74,1 Punkte, $p < 0.001$). Von den verschiedenen Allergiediagnosen war die Lebensqualität bei Patientinnen und Patienten mit Asthma bronchiale und mit allergischem Darmleiden am meisten beeinträchtigt. Bei diesen beiden Erkrankungen waren auch die körperliche Leistungsfähigkeit und die Fitness, alles zu tun was man gerne tun möchte, signifikant reduziert im Vergleich mit Personen ohne Allergien.

Schlussfolgerung: Verglichen mit Personen ohne Allergien leiden Patientinnen und Patienten mit diversen allergischen Erkrankungen an einer signifikant schlechteren Lebensqualität. Diese Tatsache sollte bei der Therapieplanung berücksichtigt werden.

Schlüsselwörter: Gesundheitswahrnehmung, Asthma bronchiale, allergische Rhinitis, Allergisches Darmleiden, Urtikaria.

Summary. Objectives: To examine the quality of life among patients with different allergic diseases and to assess the health perception of patients with allergies compared to patients without allergies.

Methods: The source of data was the Vienna Health and Social Survey, a representative cross-sectional survey, commissioned by the City of Vienna.

Results: 18.7% of those suffering from allergies in the year before questioning reported that they had felt "very impaired", 30.0% felt "quite impaired", 42.4% "a little impaired" and 8.9% "not impaired at all". Women felt "very impaired" as a consequence of allergy more often than men (21.8% vs. 15.2%, $p < 0.05$). On a scale of 0 to 100 (0 = worst possible; 100 = best possible state of health) patients with allergies rated their state of health as distinctly worse than those people without allergies (71.7 vs. 74.1 points, $p < 0.001$). Of the various allergic illnesses patients suffering from asthma or allergy-related intestinal problems experienced the greatest impairment in quality of life. For these two diseases physical ability and feeling fit enough to do what one would like to do was also significantly reduced, when compared with subjects without allergies.

Conclusion: Compared to people without allergies, patients with allergies have a significantly more impaired quality of life. It is important to take this into account when deciding upon a treatment regime.

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Key words: Health perception, asthma, allergic rhinitis, allergic bowel disease, urticaria.

Introduction

Improving the quality of life of the patient is central in the treatment and management of allergic diseases. The guidelines of the American joint task force on practice parameters in allergy, asthma and immunology recommend an evaluation of the impact of symptoms of allergic rhinitis on quality of life. Here, the subjective well being of a patient is described as the cornerstone in the evaluation of the effectiveness of different therapies [1]. The ENT section of the guidelines of the German Association for Anaesthesiology and Intensive Care Medicine (Deutsche Gesellschaft für Anästhesie und Intensivmedizin) also recommends that doctors document the influence of allergic rhinitis on the quality of a patient's life [2, 3].

The extent to which quality of life is impaired as a result of various diseases such as allergic rhinitis [4, 5], allergic skin diseases [6–9], food allergies [10] as well as asthma [11, 12] has been investigated. For asthma, it has been shown that quality of life is associated with symptom frequency and restrictions in lung function [13].

Seasonal allergic rhinitis can on the one hand lead to diminished physical performance and vitality, as well as, sleep disturbances [14] and on the other hand to increased sleepiness during the day [15]. Sexual function is also significantly impaired during the pollen season in both men and women with seasonal allergic rhinitis [16]. Asthmatics suffer from impaired quality of life through asthma-related symptoms as well as snoring and apnea [17].

Food related allergies, in particular, influence the quality of life in children in a variety of ways. In these young patients the special aspects of food preparation play a big role, family and social activities are restricted and attendance at school can be negatively affected. Parents of children with food allergies generally feel more stressed. Children with food allergies who suffered from asthma or atopic dermatitis experienced no additional effect on their quality of life [10].

Most studies, examining quality of life of patients with allergic diseases, only investigate at the effects of one specific allergy. Thus, direct comparison between the individual allergic diseases is not possible.

Methods

The Vienna Health and Social Survey (Wiener Gesundheits- und Sozialsurvey) served as the source of data for the evaluation of quality of life of patients with allergic diseases. This survey is a representative cross-sectional investigation study, commissioned by the City of Vienna and carried out in cooperation with the Institute for Advanced Studies (Institut für Höhere Studien). The survey was performed during the winter months of 1999 to 2001 on Viennese inhabitants aged 16 and over. People were selected by means of a simple random sample, using registration districts, and a face-to-face interview carried out by trained questioners with each person chosen. Individuals were asked a series of 135 questions relating to their health, which were compiled in a structured 48 page questionnaire. By this means information was gathered in the

Table 1. Characteristics of respondents of the Viennese Health and Social Survey

		%
Total (N = 4019)		100
Sex	male	51.0
	female	49.0
Age group	16–24	17.0
	25–44	39.3
	45–59	21.6
	60–74	14.9
	75+	7.1

following areas: subjective health, acute and chronic illnesses, medication being taken, and the utilisation of medical services. In addition, they were asked about areas of life potentially having an impact on health, such as, lifestyle, socio-economic status, working life, stresses and strains, living situation, social network, subjective coping strategies, and exceptional life events. At the start the net sample comprised 7,300 respondents, of which 4,019 interviews could be used for the evaluation. Thus the response rate was 55% [18].

In terms of allergies, participants were specifically asked about six different allergic diseases, as well as, “other allergies” over the past year. Patients with allergies were also asked to rate, on a scale of 1 to 4, to what extent they were impaired by their illness, with 1 denoting “very impaired”, 2 “quite impaired”, 3 “a little impaired”, and 4 being “not impaired at all”.

All participants in the Viennese Health and Social Survey were asked to rate their own health on a scale of 0 to 100, whereby 0 represented the worst possible state of health and 100 the best. To aid visualisation, study participants were shown a scale similar to a thermometer and told to use a ball point pen as a pointer to mark their subjective health on the scale. For the purpose of our assessment we compared the subjective health ratings of people with allergies with ratings given by those without allergies.

Furthermore, people taking part in the survey were asked to rate their physical ability as “very good”, “good”, “average”, “bad”, or “very bad”. Finally probands were asked to state whether they “always”, “frequently”, “sometimes”, “seldom” or “never” felt fit enough to do what they wanted to do. Here again, we compared the responses of people with allergies to those given by people without allergies.

The results of the questionnaire were analysed using the computer based program SPSS 11.5. Descriptive statistical methods were applied. The T-Test was used to compare means, and the Mann-Whitney-U-Test to compare ordinal numbers. A level of $p < 0.05$ was considered as significant.

Results

The key characteristics of the study population are shown in Table 1. 843 (21.0%) people reported having suffered from an allergic disease over the past year. 9.8% stated that they had been affected by allergic rhinitis at certain times of the year, and 3.9% by allergic rhinitis independent of season. 0.7% reported urticaria and 4.4% allergic skin rashes. By their own accounts 2.4% of subjects had suffered from asthma, 0.7% from allergy-related intesti-

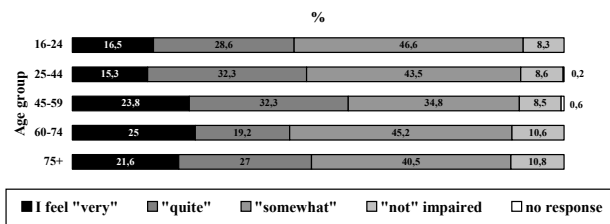


Fig. 1. Extent of subjective health impairment due to allergies in persons who reported having suffered from allergies during the past year, by age group

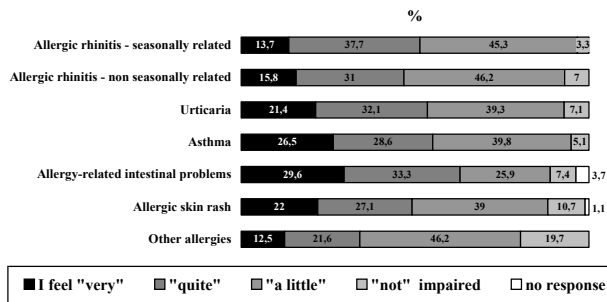


Fig. 2. Extent of subjective health impairment due to different forms of allergies in persons who reported having suffered from allergies during the past year

nal problems, and 5.2% from other allergies, in the year before questioning.

Impairment due to allergy

Of those people who stated they had suffered from allergies, 18.7% reported that they had felt "very impaired" by at least one form of allergy. 30.0% felt "quite impaired" by the allergy, 42.4% "a little impaired" and 8.9% "not impaired at all". Women felt "very impaired" by allergy significantly more often than men (21.8% vs. 15.2%, $p < 0.05$). The extent of subjective impairment due to allergies is presented by age group in Fig. 1 and by diagnosis in Fig. 2.

Subjective assessment of health

On a scale of 0 to 100 (0 = worst possible; 100 = best possible state of health) patients with allergies rated their

state of health as distinctly worse than those people without allergies (71.7 vs. 74.1 points, $p < 0.001$). Women rated their health status worse than men, both those with allergies (73.4 vs. 70.2 points, $p < 0.01$), as well as those without allergies (75.0 vs. 73.2 points, $p < 0.005$). The difference in how people with allergies rated their own health compared with those without allergies was particularly distinct in the age groups of 25–44 years and 45–59 years, see Table 2.

Subjective health was rated worst by patients with asthma with a mean of 61.8 points. Asthmatics who reported taking anti-asthmatic medication rated their health particularly poorly, 55.0 points compared with 69.9 points for those asthmatics not taking medication for this condition ($p < 0.001$).

Persons with self-reported allergy-related intestinal problems rated their health with 65.0 points, those with allergic skin rashes rated health with 70.1 points and those with other allergies with 70.9 points. Patients suffering from perennial allergic rhinitis rated their health with 72.2 points, patients with urticaria with 74.2 points and people with seasonal allergic rhinitis with 75.8 points. Sex-specific differences are presented in Table 3.

Physical ability

9.5% of people with self-reported allergies described their physical ability as bad or very bad compared with

Table 3. Subjective assessment of health on a scale from 0 to 100, for people who reported having suffered from an allergy during the past year, by allergy diagnosed and sex (0 = worst possible; 100 = best possible health)

Allergies	Men	Women
Allergic rhinitis – seasonally dependent	75.3	74.2
Allergic rhinitis – non-seasonally dependent	76.2	68.2**
Urticaria	78.0	72.1
Asthma	67.8	57.2*
Allergy-related intestinal problems	51.3	59.7
Allergic skin rash	71.9	69.0
Other allergies	71.7	70.5

T-Test for independent samples * $p < 0.05$, ** $p < 0.01$

Table 2. Subjective assessment of health on a scale from 0 to 100, for people who reported having suffered from an allergy during the past year compared with people with no allergies, by age group and sex (0 = worst possible; 100 = best possible health)

Age group	Men		Women		total	
	Non-allergic subjects	Allergic subjects	Non-allergic subjects	Allergic subjects	Non-allergic subjects	Allergic subjects
16–24	79.2	77.7	76.7	74.4	78.1	75.9
25–44	77.4	76.3	78.6	74.5**	78.1	75.5**
45–59	72.4	67.1*	71.7	64.6**	72.1	65.8***
60–74	71.7	67.7	67.4	65.9	69.5	66.6
75+	63.1	62.4	60.3	53.9	61.4	56.2

T-Test for independent samples * $p < 0.05$, ** $p < 0.005$, *** $p < 0.001$

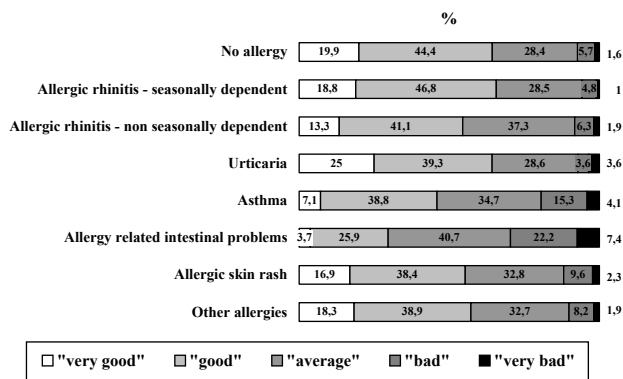


Fig. 3. Subjective physical ability in people with different forms of allergy and in those without allergies

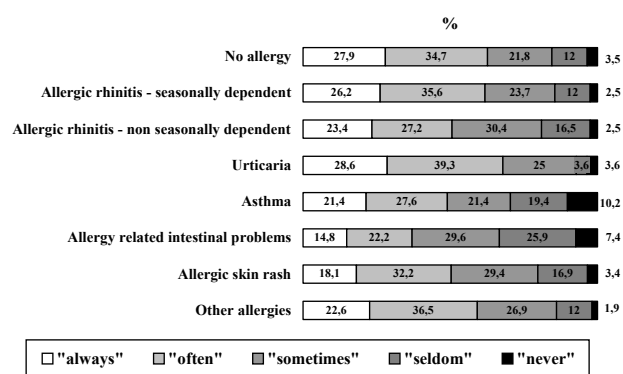


Fig. 4. Subjective assessment of feeling fit enough to do what one wants to do, in persons with different forms of allergy and persons with no allergy

7.3% of people without allergies (not significant). 19.4% of people who reported suffering from asthma during the past year described their physical ability as bad or very bad compared with 7.3% of people without allergies ($p < 0.001$) and 29.5% of people with self-reported allergy-related intestinal problems gave this description compared with 7.3% of people without allergies ($p < 0.001$), see Fig. 3.

Fitness, being able to do what one wants to do

Of those people with self-reported allergy over the past year, 17.2% described themselves as seldom or never feeling fit enough to do what they want to do. The same was reported by 15.5% of people without allergies (not significant). 29.6% of those people who reported suffering from asthma during the past year said they did not feel fit enough to do what they wanted to do compared to 15.5% of people without allergies ($p < 0.001$). This was also reported by 33.6% of people with self-reported allergy-related intestinal problems compared to 15.5% of people without allergies ($p < 0.05$), see Fig. 4.

Discussion

Our assessment of the responses given to specific questions within the framework of a population based survey shows that the quality of life of patients with allergies is

indeed distinctly impaired. Furthermore, we found that patients suffering from asthma or allergy related intestinal problems suffered the greatest impairment to quality of life. For these two diseases physical ability and feeling fit enough to do what one would like to do is also significantly reduced, when compared with subjects without allergies.

The results clearly show that the quality of life of asthmatics is more severely impaired than that of those suffering from allergic rhinitis. This fact should be taken into account when treating patients who are eligible for immunotherapy, since it has been demonstrated that with this treatment modality the risk of developing asthma can be reduced in these patients [19, 20].

Impaired quality of life due to allergy, in particular through allergic rhinitis and asthma, was experienced more strongly by women than men. These results are in accordance with another study in which women with allergic rhinoconjunctivitis reached lower SF-36 values than men [5].

Although our data show that quality of life of allergy sufferers is impaired, it cannot be determined whether the impairment is a result of the symptoms, comorbidities, or the forfeit of social functions. In a German study of people with chronic urticaria, it was shown that quality of life was particularly influenced by "social functioning" and "emotions". Psychiatric comorbidities like depression, fear and somatoform disorders significantly reinforce the forfeit in quality of life, whereas age, sex, the presence or absence of angio-oedema, or the cause of chronic urticaria have little or no influence [7].

In our survey, patients who reported suffering from allergies in the year before questioning were asked to rate the extent to which they felt impaired as a result. Thus impairment in quality of life registered can be directly attributed to the allergy. Questions regarding subjective health as well as those relating to physical ability and fitness were posed to all study participants, therefore, results cannot be directly ascribed to the presence of an allergy, and they could also potentially be attributable to comorbidities. Different comorbidities connected with allergies have been described in other scientific papers. According to an Australian household telephone interview survey patients with medically diagnosed asthma had a higher probability of suffering from other illnesses such as diabetes, arthritis, cardiovascular illnesses, stroke, cancer or osteoporosis. A reduced quality of life was reported in patients with asthma, which deteriorated in the presence of an additional comorbidity in persons older than 35 years, on the other hand this was not observed in younger people [21]. Diseases occurring in connection with allergic rhinitis include conjunctivitis, sinusitis, asthma, atopic eczema and food allergies. In addition, comorbidities such as recurrent effusions of the middle ear, failure to grow, limited physical ability and misalignment of teeth or the jaw have been described [2].

Methodological limitations of the study relate to the simple random selection of participants for the survey. Systematic losses occur, which could have an impact on the representativeness of the sample. A weighting of the sample was waived for this analysis in order to avoid pos-

sible distortions in the comparison of sub groups and to enable application of further statistical methods.

In accord with other studies we were able to establish a clear link between the presence of an allergy and a reduction in quality of life, with asthmatics suffering the greatest impairment. Patients with allergies not only experience personal physical impairment, but the symptoms of allergies can also have ramifications for other aspects of life, including social activities. It is important that awareness of these problems is reinforced not only at the therapeutic decision making level, but also amongst the general public, in order to help optimise management of allergic diseases.

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