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Allergic rhinitis substantially impacts patient quality of life: Findings from the Nasal Allergy Survey Assessing Limitations

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TAKE-HOME POINTS

- People with allergic rhinitis (AR) rate their overall health significantly lower than individuals without nasal allergies.
- Compared with the general population, more people with AR complain of difficulty getting to sleep, waking up during the night, lack of a good night's sleep, or a combination of these, as a result of their nasal symptoms.
- More than half of individuals with AR

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describe their symptoms as impacting daily life a lot or to a moderate degree.

- More adults with AR report that their health limits them from doing well at work compared with adults without nasal allergies, and their estimated productivity drops by an average of 20% on days when their nasal symptoms are at their worst.

Closing thoughts: Implications of the findings from the National Allergy Survey Assessing Limitations for the management of allergic rhinitis in America

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■ INTRODUCTION

Allergic rhinitis (AR) is a common chronic medical condition, affecting at least 40 million people in the United States (US).¹ The overall prevalence of AR has been increasing since the early 1980s across all age, sex, and racial groups and is one of the most common chronic diseases among all age groups in the US.² AR can often be a debilitating condition, which, if untreated, can result in considerable health-related and economic consequences. For example, numerous studies have demonstrated that poorly controlled symptoms of AR contribute to decreased health-related quality of life (HRQoL), reduced sleep quality, daytime fatigue, impaired learning, impaired cognitive functioning, and decreased long-term productivity.^{3,4} One study evaluating the impact of AR and asthma on HRQoL found that people with AR were more likely to report problems with social activities, difficulties with daily activities, and decreased feelings of mental well-being than people without AR.⁵ Moreover, as discussed by Hadley et al⁶ later in this supplement, the presence of AR is directly linked to exacerbations of other inflammatory airway diseases, such as asthma, chronic otitis media, and rhinosinusitis and thus has additional important health implications.

Despite the fact that the symptoms of nasal congestion, sneezing, rhinorrhea, and nasal itch can be very troublesome to the patient, many people with AR do not seek medical advice regarding treatment, choosing instead to self-treat with home remedies and over-the-counter medications.⁷ This may be because AR is perceived by both patients and the health care community as less important than other airway diseases such as asthma. However, nasal allergies are responsible for substantially more disability than is generally realized, and it has been estimated that AR results in significant absenteeism with 3.5 million lost workdays and 2 million missed school days each year.⁸ When other factors related to presenteeism (ie, performance deficits) are included, this rises to an estimated 28 million days of restricted activity or reduced productivity because of AR annually in the US.⁹ Thus, it is evident that the general population lacks an understanding of the symptom burden of AR, its associated risks for other respiratory complications, and its ability to compromise all aspects of an individual's QoL.

The Nasal Allergy Survey Assessing Limitations (NASAL; www.nasalsurvey.com), a study sponsored by Teva Respiratory, LLC, was the first national survey to measure the burden of disease of AR in the US by comparing the health status of adults with current hay fever, AR, or nasal allergies (N = 400) with a national sample of adults without nasal allergies (N = 522). The objective of this aspect of the survey was to examine the impact of AR on patient-perceived health status, daily activities, and emotional status. Full details of the survey methods are provided elsewhere in this supplement.

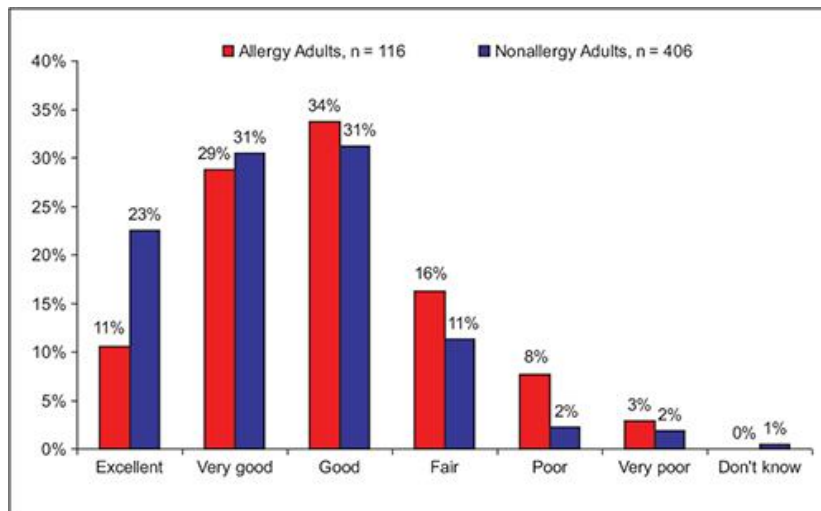
■ RESULTS OF THE NASAL ALLERGY SURVEY ASSESSING LIMITATIONS

Impact of Nasal Allergies on Patient-Perceived Health Status

Although the majority of people with AR reported a good overall health status (excellent 11%; very good 29%; good 34%), when compared with adults without nasal allergies it became clear that AR patients rated their overall health significantly lower. Nearly twice as many adults without nasal allergies rated their health as excellent (23%), compared with AR patients (11%), and at the other extreme, nearly twice as many AR patients rated their health as only fair/poor/very poor (27%) compared with adults without nasal allergies (15%) (**FIGURE 1**).

FIGURE 1

Respondent-rated general health status: Nasal allergy vs nonallergy*



All respondents were asked: In general, would you say that your health is excellent, very good, good, fair, poor, or very poor?

Base: All respondents, N = 522; *Pearson chi-square, $P \leq 0.05$.

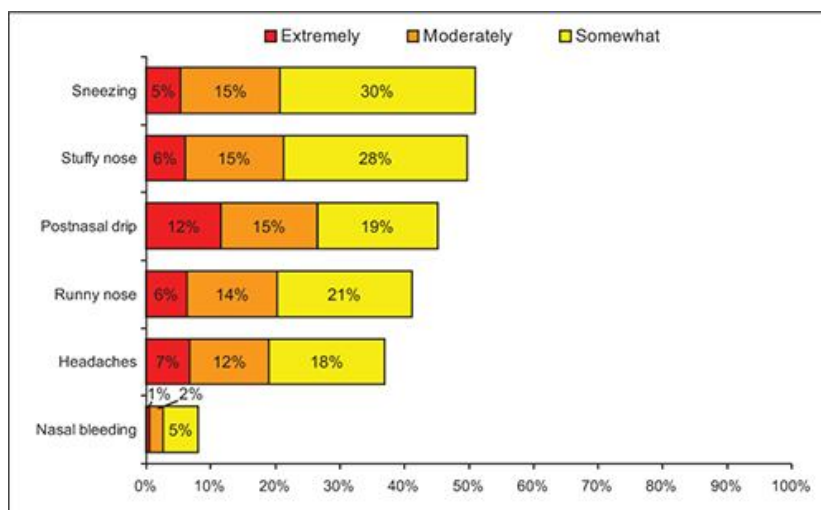
Nasal Allergy Symptoms

The most frequent allergy symptoms may not be the most bothersome, so this national sample of adults with nasal allergies was asked how troubled they had been in the past week by 6 specific allergy symptoms (FIGURE 2). About half of these allergy sufferers reported that they had been extremely, moderately, or somewhat bothered in the past week by sneezing (50%) and nasal congestion (49%). Slightly fewer than half were at least somewhat bothered in the past week by postnasal drip (46%) and runny nose (41%) and more than a third were at least somewhat bothered by headaches (37%).

When asked how these symptoms affected their daily life during their worst allergy symptoms month, 33% reported that the condition affected their daily life either a lot or a moderate amount, 23% reported some impact, 22% said it only affected their life a little, and 21% said it did not really impact their daily life at all, even during the worst month. Thus, more than half the AR patients described their symptoms as impacting life a lot, a moderate degree, or some.

FIGURE 2

Patient-rated troublesomeness of nasal allergy symptoms in the last week



Patients with nasal allergies were asked: How troubled have you been by these symptoms during the last week? Were you not at all troubled, hardly troubled, somewhat troubled, moderately troubled, or extremely troubled?

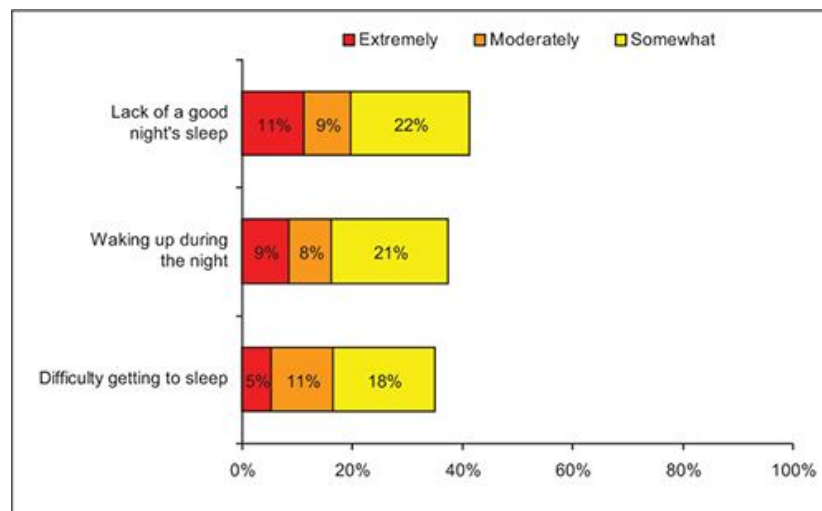
Base: All respondents, N = 400.

Nasal Allergies and Sleep Disturbance

NASAL was one of the first surveys to provide a specific focus on the impact of nasal allergy symptoms on sleep disturbances among AR sufferers in the US. Overall, 34% reported that they have been troubled (somewhat/moderately/extremely) by difficulty in getting to sleep, 38% reported that they have been troubled by waking up during the night, and 42% reported that they have been troubled by lack of a good night's sleep in the past week as a result of their nasal allergy symptoms (**FIGURE 3**). Compared with the general population, more patients with AR reported that they had been extremely or moderately bothered by difficulty in getting to sleep (24% vs 8%), at least moderately bothered by waking up during the night (31% vs 13%), and extremely or moderately troubled by lack of a good night's sleep (26% vs 11%) as a result of their nasal symptoms in the past week.

FIGURE 3

Patient-rated problems with sleep in the last week



Patients with nasal allergies were asked: How troubled have you been by each of these symptoms during the last week as a result of your nasal symptoms? Were you not at all troubled, hardly troubled, somewhat troubled, moderately troubled, or extremely troubled?

Base: All respondents, N = 400.

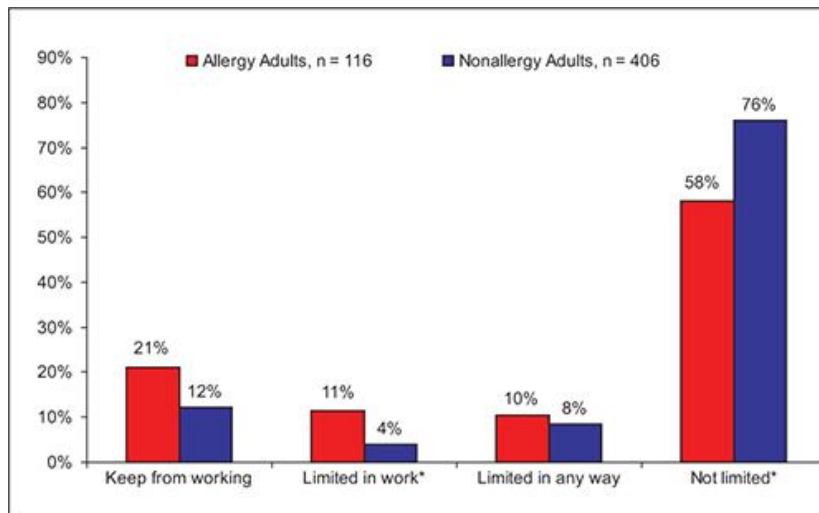
Nasal Allergies and Activity Limitations

Activity limitation provided another measure of the burden of AR. Both patients with AR and those without nasal allergies were asked whether their health kept them from working. If their health did not keep them from working, they were asked whether they were limited in the kind or amount of work they could do because of their health. If they were not kept from working or limited in the kind or amount of work they could do, they were asked if their activities were limited in any way by their health.

As many as 1 in 5 AR patients (21%) reported that their health kept them from working, compared with 12% of adults without nasal allergies. Another 11% of AR patients said that they were limited in the kind or amount of work they could do because of their health, compared with only 4% of adults without nasal allergies. Finally, considerably fewer AR patients said that they were not limited by their health in any way, compared with those without nasal allergies (58% vs 76%, respectively) (**FIGURE 4**).

FIGURE 4

Impact of health on daily life: Nasal allergy vs nonallergy



All respondents were asked: (A) Does your health keep you from working? (B) Are you limited in the kind or amount of work you can do because of your health? (C) Are your activities limited in any way by your health?

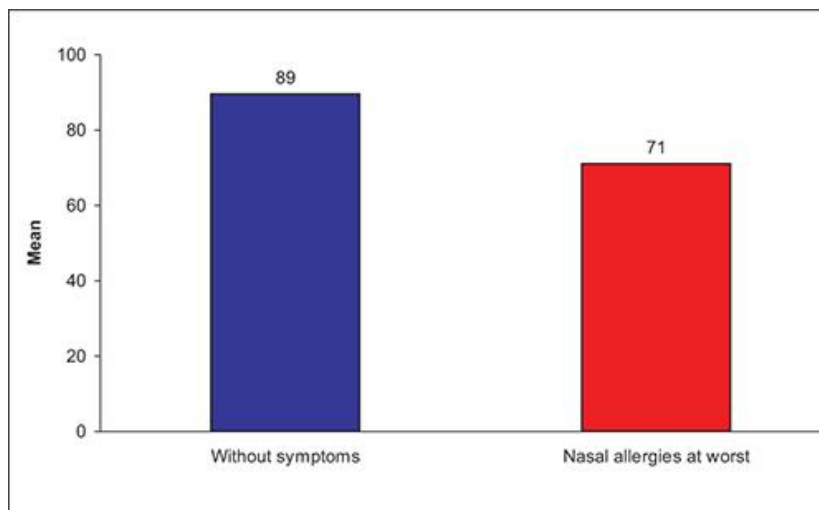
Base: All respondents, N = 522. *Pearson chi-square, $P \leq 0.05$.

Nasal Allergies and Productivity

Nasal allergies appear to affect a person's productivity when symptoms are problematic. Respondents in both surveys were asked, on a scale of 0 to 100, in which 100 means 100% productivity, where they would rank their productivity on average days when they did not have an immediate health concern. Adults without nasal allergies ranked their average productivity at 88% on days without immediate health concerns, which was virtually identical to the average reported productivity at 89% for AR patients on days when they were not experiencing nasal allergy symptoms. However, these same AR patients reported that their average productivity was only 71% on days when their nasal allergies were at their worst, representing a 20% decline in productivity of adults as a result of nasal allergy symptoms (FIGURE 5).

FIGURE 5

Patient-rated impact of symptoms on work productivity



Patients with nasal allergies were asked: (A) Thinking about your productivity at work on a scale from 0 to 100, where 100 means 100% productivity, where would you rank your productivity on days when you don't have nasal allergy symptoms? (B) Where would you rank your productivity on the same scale from 0 to 100, where 100 means 100% productivity, when your nasal allergies are at their worst?

Base: All respondents, N = 400.

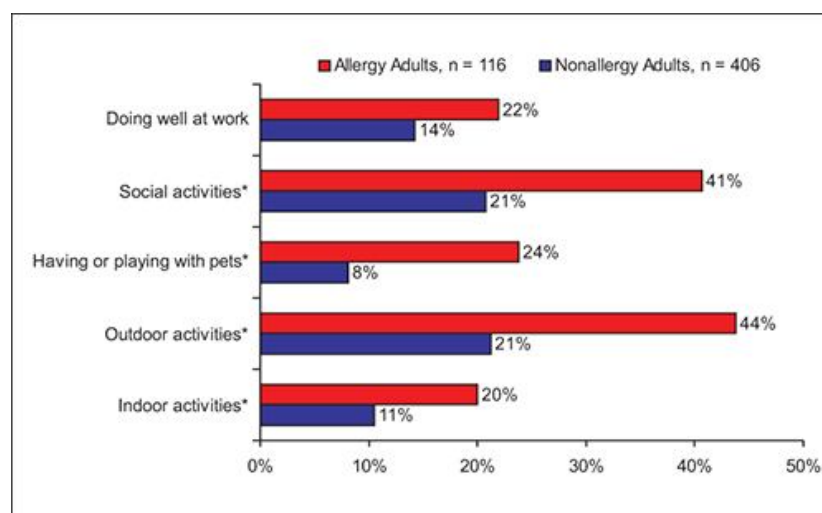
Nasal Allergies and Other Activity Limitations

In order to estimate the impact of nasal allergies on specific activities for adults with AR, both samples were

asked how much their health limited them in 5 activity areas. Nearly twice as many AR patients said that their health limited them in outdoor activities (44% vs 21%) and in indoor activities (20% vs 11%), compared with adults without nasal allergies. Similarly, more AR patients than adults without nasal allergies felt that their health limited them in social activities (41% vs 21%), doing well at work (22% vs 14%), and having or playing with pets (24% vs 8%) (**FIGURE 6**).

FIGURE 6

Impact of nasal allergies on specific activities: Nasal allergy vs nonallergy*



All respondents were asked: How much do you feel that your health limits what you can do in the following areas (doing well at work, social activities, having or playing with pets, outdoor activities, indoor activities)? Do you feel your health restricts you frequently, sometimes, rarely, or never?

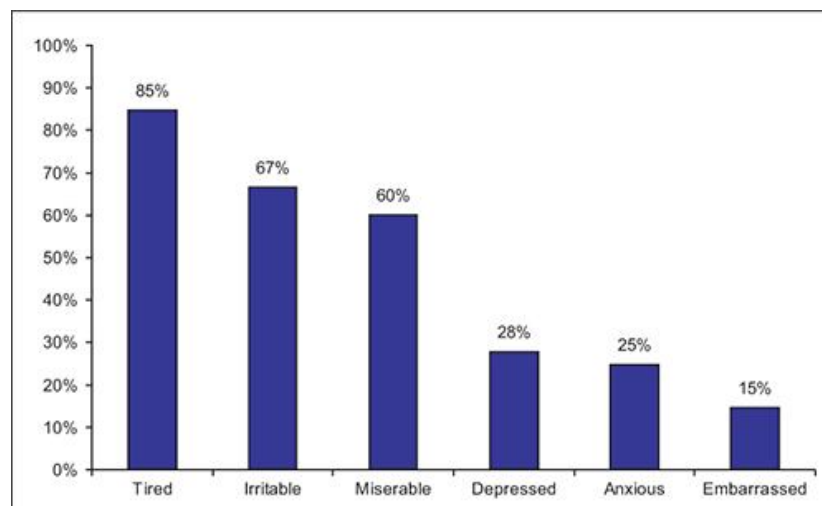
Base: All respondents, N = 522; *Pearson chi-square, $P \leq 0.05$.

Nasal Allergies and Emotional Burden

Nasal allergies pose an emotional burden of disease, as well as the physical burden of disease. Patients with AR were asked how often they felt certain ways during their worst month. Overall, the majority of AR patients said that they frequently or sometimes experienced emotional problems during the worst month of symptoms: 67% said that they frequently or sometimes felt irritable, 60% said they felt miserable, 28% said they felt depressed, 25% said they felt anxious, and 15% said they felt embarrassed. Even more noteworthy, 85% reported that they frequently or sometimes felt tired during the worst month of allergy symptoms (**FIGURE 7**).

FIGURE 7

Patient-rated emotional burden during the worst month of symptoms



Patients with nasal allergies were asked: During the worst month of allergy symptoms, how often do you

feel (depressed, irritable, tired, embarrassed, miserable, or anxious)— frequently, sometimes, rarely, or never?

Base: All respondents, N = 400.

■ DISCUSSION

NASAL was the first national survey to measure the burden of disease of AR in the US by comparing the health status of adults with current AR, nasal allergies, or hay fever with a national sample of adults without nasal allergies. The survey clearly demonstrated that nasal allergies imposed a considerable burden. Only a minority of AR patients in this study considered their health to be very good or excellent, and more than 2 in 5 patients (41%) said that their health kept them from working, limited the kind or amount of work they do, or limited them in some other way.

Furthermore, the survey showed that patients were not just troubled by the presence of their AR symptoms, but that AR had added effects on various aspects of their daily life. They were troubled by not being able to sleep well at night because of their symptoms and reported being fatigued and distracted during the day. Nasal problems, particularly nasal congestion and rhinorrhea, led to disordered nighttime breathing and sleep disturbances.¹⁰⁻¹² Indeed, the Allergic Rhinitis and its Impact on Asthma (ARIA) guidelines included sleep disturbances as a key factor in their definition of severity based on the impact of rhinitis on HRQoL.¹³ The widespread experience of fatigue among nasal allergy patients was certainly related to sleep disruption associated with nasal allergy symptoms. It is also possible that rhinitis-disturbed sleep contributed to the very high proportion of AR patients who, in this survey, reported feeling irritable and miserable and, in the more serious cases, has been a cause of feelings of anxiety and depression, reported by up to one-quarter of AR sufferers.

Importantly, NASAL also showed that the burden of disease of AR imposed a social and economic cost on the patient and on society through its impact on work performance. In addition to keeping some allergy sufferers from working, nearly twice as many AR patients reported that their health limited them frequently or sometimes from doing well at work compared with adults without nasal allergies and their estimated productivity dropped from an average of 89% on days when they did not have nasal symptoms to 71% on days when their nasal symptoms were at their worst. These results were in agreement with those of other studies, which reported work impairment in up to 60% of patients with seasonal AR and up to 40% of those with perennial AR.¹⁴ One large US survey published in 2006 found that 55% of employees experienced AR symptoms for an average of 52.5 days per year, was absent from work 3.6 days per year because of AR, and were unproductive in the workplace for 2.3 hours per day because of AR symptoms. The mean total productivity (absenteeism + presenteeism) losses per employee per year were higher (\$593) for AR than for stress, migraine, depression, arthritis/rheumatism, anxiety disorder, respiratory infections, hypertension, diabetes, asthma, and coronary heart disease.¹⁵

Five years ago, another national survey found results similar to those of NASAL regarding the impact of AR on daily life and productivity at work.¹⁶ A key goal of surveys such as this is to raise physician and ultimately patient awareness of the significant physical, social, emotional, mental, and economic impact AR has on the US public. AR is an eminently treatable condition. Environmental controls and immunotherapy are directed toward the triggers and the pathophysiologic process.¹³ Pharmacologic treatments are generally well tolerated, and studies have long shown that effective therapy can improve sleep quality and reduce daytime fatigue,^{17,18} as well as benefit work productivity¹⁹ and overall QoL.²⁰ The fact that many people with AR do not seek adequate medical advice means that clinicians may not be providing sufficient patient education and that more work on public awareness of the burden of AR is needed.

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