

Original Article

Findings from an Online Survey Assessing the Burden and Management of Seasonal Allergic Rhinoconjunctivitis in US Patients

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What is already known about this topic? Symptoms of seasonal allergic rhinoconjunctivitis (SARC) affect 16% or more of the US population annually with demonstrated negative impact on sleep, daily activities, productivity, concentration, and emotions.

What does this article add to our knowledge? The patient-perceived burden of SARC assessed by an online survey is discussed in relation to newer treatments, increased access to treatments, and changing management protocols.

How does this study impact current management guidelines? The data suggest that patient expectations for therapy are increasingly being met and patients are taking more responsibility for their (child's) condition. Continuing to educate patients about SARC and its treatment remains a priority.

BACKGROUND: Seasonal allergic rhinoconjunctivitis (SARC) affects $\geq 16\%$ of the US population annually. Telephone and in-office surveys have demonstrated negative effects of allergic rhinitis (AR) symptoms on sleep, daily activities, productivity, concentration, and emotions.

OBJECTIVE: The objective of this study was to assess the patient-perceived burden of SARC in relation to newer treatments, increased access to treatments, and changing management protocols.

METHODS: An online survey of symptom experience, impact on daily life, and management was conducted in US respondents who suffer (or whose child suffers) from SARC symptoms.

RESULTS: A total of 1001 surveys were completed: 500 adults (≥ 18 years old) and 501 children (12-17 years old, documented by their parents). Similar to earlier AR surveys, SARC symptoms negatively affected the patient's (and family's) quality of life, and were most severe in the spring. Before being treated, $>50\%$ of respondents reported daily symptoms during their season; 75% to 80% considered their symptoms moderate to severe. Patients saw a variety of health care professionals (including pharmacists) and used over-the-counter and prescription medications for symptoms. Those using prescription medications were generally more satisfied with treatment and less likely to switch or discontinue treatment. Nasal and/or ocular symptoms drove adherence, seeing a health care professional, and reviewing and/or changing treatment.

CONCLUSIONS: The majority of patients with SARC report moderate-to-severe symptoms that significantly impair their quality of life. However, patients appear to be taking more responsibility for their (child's) condition, and patient expectations for therapy are increasingly being met. Continued efforts will be needed to examine the contribution of better information and/or increased access to and availability of medications to control the disease. © 2016 The Authors. Published by Elsevier Inc. on behalf of the American Academy of Allergy, Asthma & Immunology. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>). (J Allergy Clin Immunol Pract 2016;■:■-■)

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Seasonal nasal and ocular allergy, often referred to as seasonal allergic rhinoconjunctivitis (SARC) and sometimes as "hay

Abbreviations used

AR- Allergic rhinitis
 HCP- Health care professional
 INAH- Intranasal antihistamine
 INCS- Intranasal corticosteroid
 OTC- Over the counter
 QoL- Quality of life
 SARC- Seasonal allergic rhinoconjunctivitis

fever," is a common chronic disease, estimated to affect upward of 16% of the population of the United States in any one year.¹⁻³ Although estimates of the incidence and prevalence can vary widely depending on the specific population and analyses used,^{3,4} trends indicate that neither has diminished despite a better understanding of the condition, new pharmacological and immunological treatments, and increased access to care. Indeed, patient-reported and/or physician-diagnosed seasonal nasal and ocular symptoms seem to have become more common.^{3,5-8}

Patients commonly report bothersome symptoms affecting the nose (congestion, sneezing, itching, rhinorrhea) and eyes (itching, redness, watering, swelling) that can vary in frequency, intensity, and seasonality. The underlying mucosal inflammation also can exacerbate other conditions, and symptoms can impair patients' quality of life (QoL).^{4,6} For children in particular, symptoms can negatively impact family and daily activities.⁹ Management requires a multifaceted approach for most individuals, and the patient (and/or parent/caregiver) needs to understand the disease, its variability, and how and when treatment works to optimize clinical outcomes.^{3,7,8,10} Standard approaches to manage SARC include environmental control methods, pharmacotherapy, and immunotherapy; patient education is critical for day-to-day care.^{3,10} Discussion of management is beyond the scope of this paper, and readers are directed to several excellent reviews as well as current guidelines.^{3,7,8,10-12} The goal of treatment is control of the disease, which translates to minimal symptoms and improved well-being and ability to function for the patient (and family).^{3,6-8,10}

Data reported over the past 15 years from surveys of individuals with nasal allergies in the United States and health care professionals (HCPs) who treat these individuals illustrate how burdensome allergic rhinitis (AR) can be (Table 1).^{4,5,9,13-17} The surveys included patients with both perennial and seasonal allergy symptoms, and many patients had a combination of year-round symptoms that became worse in certain seasons. No survey focused predominantly on patients with seasonal allergy. Overall, the findings suggested that the impact of AR and its management had been underestimated, and conversations have ensued regarding best approaches for improving outcomes. Whether the outcomes have changed since then is of interest, particularly with the availability of newer drug products (eg, aerosolized intranasal corticosteroids [INCS], intranasal antihistamines [INAH], INAH+INCS combination, sublingual immunotherapy), increased over-the-counter (OTC) access to medications, and continued discussion of best paths to management. This paper describes an online survey undertaken to assess patients' perceptions of SARC, its impact on daily life, and its management.

TABLE 1. Key outcomes of phone and paper surveys of patients with allergic rhinitis and health care professionals (HCPs) who treat those patients in the United States^{4,5,9,13-17}

In previous surveys patients with allergic rhinitis and HCPs reported that:
 The worst season for nasal and eye allergy symptoms was spring.

The most bothersome symptom was nasal congestion/stiffness/blocked nose.

Nasal and ocular allergy symptoms negatively affected physical and emotional health, daily activities, cognitive ability, and productivity, and contributed to missed work and school days.

Patients used over-the-counter and prescription medications to reduce their symptoms—predominantly oral nonsedating antihistamines and intranasal corticosteroids.

Treatment dissatisfaction was high, and reflected incomplete relief, slow onset of relief, duration of relief less than 24 h, and/or a sense of reduced efficacy with use over time.

Inadequate efficacy was the primary reason for discontinuing or changing medications.

Nasal and ocular allergy exacerbated comorbid conditions, particularly asthma and rhinosinusitis.

METHODS

Survey

The survey was conducted online in the United States between March 2 and March 9, 2015, by Nielsen Consumer Insights on behalf of the Asthma and Allergy Foundation of America. The inclusion criteria for survey respondents were as follows:

- Ages 18 years or older
- Personally suffers (or has a child, aged 12-17 years, who suffers) from nasal and/or ocular symptoms of seasonal allergies
- Confirmed by a physician based on the question "Have you been told by a doctor that you have (or your child has) any of the following conditions..." as shown in Appendix E1, available in this article's Online Repository at www.jaci-inpractice.org
- Has sought treatment from a medical professional for SARC symptoms for themselves or their child in the past year

The survey was designed to be approximately 15 minutes in length and to obtain information on patient and/or parent perspectives of the burden of nasal and ocular seasonal allergy symptoms occurring at a time when they (their child) typically experienced symptoms (as opposed specifically to the week of survey administration). Survey design was similar to earlier phone surveys^{4,5,9,13-17} but updated given the availability of newer prescription and OTC medications since those surveys were conducted. The survey is shown in Appendix E1, available in this article's Online Repository at www.jaci-inpractice.org.

Sample source

The sample source was derived from a Harris Poll panel of respondents for online consumer research supplemented by similar online panels from various Nielsen research partners. The sample was pulled randomly to provide a national census representation of respondents who met the inclusion criteria. To efficiently screen for parents of children with SARC, individuals preidentified from known panel statistics as parents of children (<18 years) were targeted.

Email invitations were sent to a total of 79,839 potential respondents with a password protected link, so that each link could only be used once.

Data analysis

The total data were weighted to represent the general population of ≥ 18 year olds and parents of children (12-17 years old), and then were combined proportionally into a representative total. Weighting was based on the demographics of the adult respondent, and the weighting variables included age by gender, household income, education, race and/or ethnicity, region, and whether or not a parent. Propensity score weighting was used to adjust for respondents' propensity to be online.

Because the sample is based on respondents who agreed to participate in market research surveys, estimates of theoretical sampling error could not be calculated.

RESULTS

A total of 1001 surveys were collected: 500 adults (≥ 18 years old) and 501 children (12-17 years old as documented by their parents). Table II presents the patients' characteristics at the time of the survey. All patients suffered from SARC and had sought medical treatment for their symptoms. Approximately 74% of the adults and 84% of children had been tested for their seasonal allergies. Throughout this paper, the term "patients" refers to adult respondents (and/or to their children) who suffer from nasal and/or ocular symptoms of seasonal allergies.

Patients' condition

The majority of patients experienced nasal and/or ocular allergy symptoms in the spring (adults 95%, children 92%), though more than 60% of patients also reported symptoms in the summer and the fall (Figure 1). Approximately 20% of adults and 21% of children reported experiencing symptoms year round. The seasonal triggers listed by patients are shown in Table III.

Patients reported spring allergy symptoms as the worst, both when asked about the season with the worst symptoms (spring, 64%; summer, 16%; fall, 15%; winter, 6%) and when asked to classify the severity of their (or their child's) symptoms by season (Figure 2).

Almost all patients experienced symptoms at least monthly (adults, 93%; children, 91%) during their reported allergy season(s). Approximately half had daily symptoms (adults, 57%; children, 46%). The single most bothersome symptoms for which patients sought treatment are shown in Figure 3. Before treatment, most patients rated their overall symptoms as moderate (adults, 43%; children, 50%) or severe (adults, 45%; children, 38%); the symptoms rated as most severe were nasal congestion (adults, 46%; children, 42%) and stuffy nose (adults, 33%; children, 36%). The severity ratings and the symptom terminology were evaluated according to the respondents' interpretation of their symptom experience. No guidance was provided as to what mild, moderate, or severe might entail, nor for the different terms for nasal congestion.

Impact of seasonal allergy symptoms

SARC had substantial negative impact, physically, mentally, and emotionally (Figure 4). When asked about productivity, performance, concentration, and feelings, more than 50% of patients (adults and children) reported impairment of daily activities and/or increased levels of distraction, irritability, fatigue, and frustration when suffering from symptoms of SARC. Patients also reported feeling unhappy, upset, and angry, and expressed negative self-images in relation to their symptoms.

Approximately 9 of 10 patients experienced at least some disruption of sleep due to their allergy symptoms; for

TABLE II. Patient demographics and characteristics at the time of survey

Characteristic	Adults (n = 500)	Children (n = 501)
Gender, %		
Male	45	54
Female	55	46
Mean age, y (range)	50.5 (18-88)	14.6 (12-17)
Ethnicity, %		*
Caucasian	76	66
Hispanic	10	21
Black/African American	11	9
Asian/Pacific Islander	1	2
Region of the United States, %		*
East	23	22
Midwest	19	21
West	18	18
South	40	35
Diagnosed and allergy tested by a physician, %	74	84
Mean age at first diagnosis,† y (range)	24.4 (1-75)	8.5 (1-18)
Under care of health professional at the time of survey, %‡		
Primary care physician	58	35
Pediatrician	1	30
Nurse practitioner	6	7
Allergy specialist	14	24
Ear, nose, and throat doctor	10	10
Pharmacist	5	5
Other§	2	—
None	21	12
Education		*
High school or less	26	27
Some or completed college	50	47
Some or completed graduate school	14	14

*Ethnicity and education level were recorded for the responding parent.

†Mean age of patients diagnosed by a physician.

‡More than one response allowed; total may exceed 100%.

§Included asthma specialist, dermatologist, homeopath, internist, neurologist, ophthalmologist, physician assistant, pulmonologist as specified by respondents.

approximately 40%, symptoms affected sleep "a lot" (Table IV). Symptom-related interference with daily leisure and/or social activities and productivity at work or school was considerable, with approximately one-third experiencing "a lot" of interference. When subsequently asked to estimate days of lower productivity per month with allergy symptoms, 82% of adults and 91% of children reported being less productive at work and/or school for at least 1 day/month. Approximately 50% of patients (adults, 48%; children, 54%) experienced 6-20 days of diminished productivity. The mean estimates for days of lost productivity related to seasonal allergy symptoms were 9.3 for adults and 10.2 for children in a typical seasonal allergy month.

Management

Most patients saw an HCP due to their nasal and/or ocular allergy symptoms more than once a year, and children generally saw their HCPs more frequently than adults (Table E1, available in this article's Online Repository at www.jaci-inpractice.org).

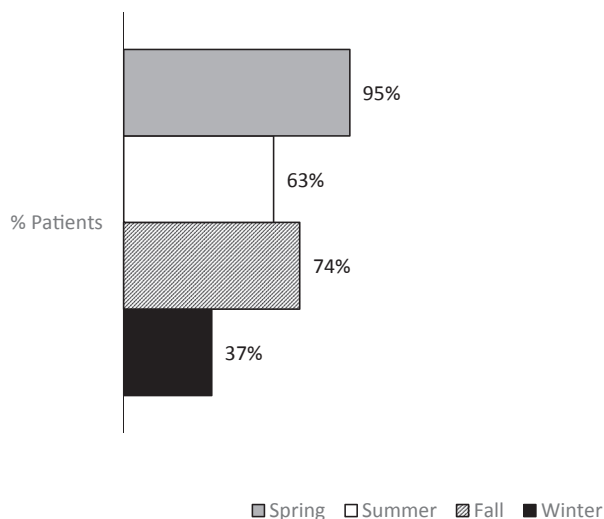


FIGURE 1. Season(s) when patients experienced nasal and/or eye allergy symptoms. Base = all qualified respondents, N = 1001. Respondents were asked to indicate all that applied.

Approximately 4% of patients (adults and children) saw a pharmacist for care. In most cases, the patient (or parent) initiated the discussion about different treatment options for their (child's) allergy symptoms (adults, 69%; children, 61%). Of these, 5% or fewer initiated the discussion because of advertisements (TV, print, internet) or recommendations (family, friends) for specific medications. Patients used a wide range of products to manage their (child's) symptoms (Figure 5). The specific classes of allergy medications being used by respondents or their children at the time of the survey are shown in Table V. Antihistamines (oral, intranasal) were the most commonly used medication, both OTC and prescription.

When asked about how they chose what to use to treat SARC symptoms, most respondents reported either only taking medications recommended by their physician or pharmacist (adults, 39%; children, 47%) or taking recommended medications but sometimes supplementing with other OTC medications for specific symptoms (adults, 27%; children, 30%). The remainder used OTC medications without the benefit of a health professional's recommendation.

Symptoms and symptom onset were the primary signals to take allergy medication for 47% of adults and 46% of children. However, some respondents reported using allergy medication daily and year round (adults, 41%; children, 28%) either because of symptoms or "to ward off symptoms." Only 12% of adults and 26% of children started their allergy medications before seasonal symptom onset.

Symptoms and symptom onset were also the key signals for re-evaluating care. Respondents most commonly reassessed care "when symptoms are no longer managed with current care" (adults, 57%; children, 47%, difference statistically significant at 95% confidence level) and "at the beginning of each allergy season" (adults, 22%; children, 43%, difference statistically significant at the 95% confidence level).

Respondents reported switching between brands, formulations, and type of medication (OTC, prescription) over time (Figure 6). Patients taking OTC medications were more likely to change brands and formulations compared with patients using only

TABLE III. Reported triggers of seasonal allergy nasal/ocular symptoms (% patients)

Trigger	Adults (n = 500)	Children (n = 501)	Total (N = 1001)
Tree pollen	75%	75%	75%
Grass pollen	69%	77%	71%
Weed pollen	69%	70%	69%
Mold spores	52%	52%	52%
Other*	16%	4%	13%
Don't know	8%	7%	8%

*As specified by respondents, this included dust/dust mites, flower pollen, animal dander, blooming plants, insects, chemicals, humidity, perfumes, and/or unknown.

prescription medications (35% and 20%, respectively). Approximately 15% of respondents reported adding OTC medications to supplement what their (child's) doctor prescribed. Switching between OTC and prescription medications also was cited—approximately 18% of patients switched from prescription medications to only using OTC medications; approximately 11% of patients switched from OTC medications to only using prescriptions.

Satisfaction with treatment

Patients were asked about their satisfaction with the effectiveness of various types of treatments for SARC symptoms. Satisfaction was rated highest for allergy injection immunotherapy (shots) (adults, 94%; children, 95%), though only 10% of patients were treated this way (Figure 5). Prescription medications had the next highest satisfaction ratings, and nonprescription OTC medications the lowest. Nonetheless, the satisfaction ratings for all classes of medications were fairly high. For adults, the ratings were: allergy shots (94%) > prescription oral allergy medications (83%) > prescription seasonal nasal sprays, overall (78%) > OTC oral allergy medications (69%) > OTC seasonal sprays, overall (64%). For children, the ratings were slightly higher with less between-class differentiation: allergy shots (95%) > prescription oral allergy medication (87%) ≈ prescription seasonal nasal sprays (88%) > OTC seasonal sprays (81%) ≈ OTC oral allergy medication (79%). The various nasal sprays were not specified as to type.

Effectiveness, providing consistent relief from SARC symptoms, and few side effects were the three most important criteria in patient ratings of their allergy treatments (Figure 7). Quick relief, ease of use, and cost considerations while ranked lower were important considerations for most patients. Under a separate query, most patients agreed that their current medications met the criteria previously rated as important (Figure 8).

Cost and compliance considerations

When asked about changes in the cost of medications for their SARC symptoms over the past year, about half of the patients reported that costs have remained the same, regardless of whether they were using OTC or prescription medications. The remainder was more likely to report their medications having increased in price—36% of patients using prescription medications and 40% of those using OTC medications.

Cost was an important criterion for treatment (Figure 7). Seventy-two percent of patients who preferred an OTC medication noted that it was important that the medication be within their budget. For those using prescription medications, 69% and 65%, respectively, cited "covered by my prescription plan" and

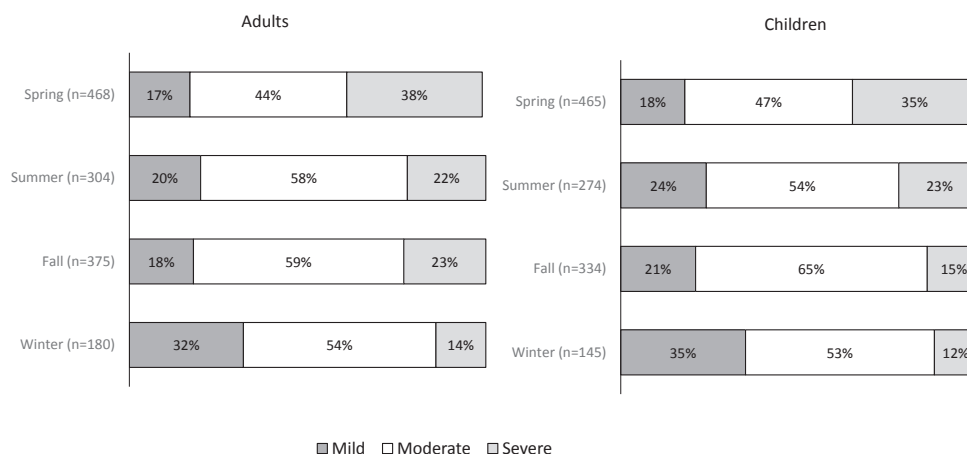


FIGURE 2. Respondents' classification of their/their child's seasonal allergy (nasal/eye) symptoms, by season. Base = all qualified respondents, N = 1001. Respondents were asked to indicate all that applied.

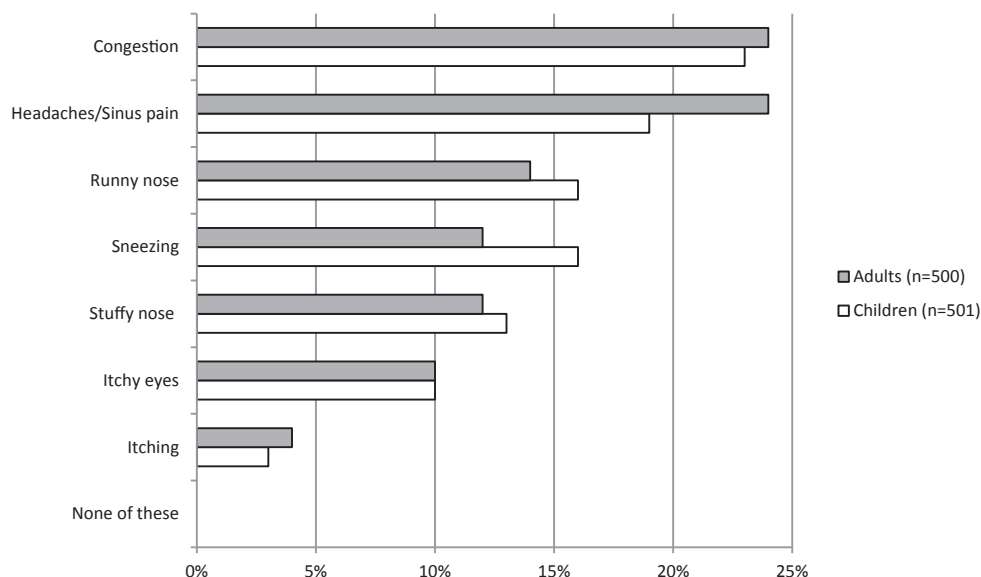


FIGURE 3. The single most bothersome symptom for which treatment was sought for the respondent or the respondent's child. Base = all qualified respondents, N = 1001.

“available at my lowest copay” as important criteria. In response to a subsequent query, most patients agreed that their current SARC medications met these criteria: available OTC and within budget, 67%; covered by prescription plan, 89%; available at lowest copay, 83% (Figure 8).

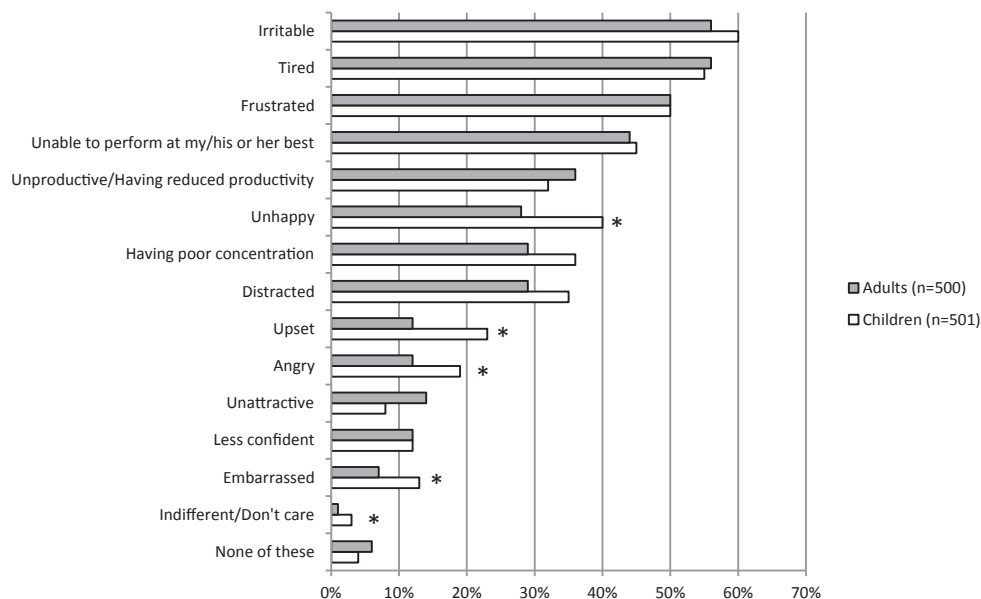
About two-thirds of patients reported taking their medication exactly as prescribed or recommended. Another 20% reported only using their medication(s) when they (their child) had symptoms. The remainder indicated effort at keeping to directions, but sometimes not following them. Patients who perceived their symptoms as “severe” were more likely to take their medications exactly as prescribed/recommended (severe, 50%; moderate, 32%; mild, 31%). The reasons given for not taking medications as prescribed are shown in Figure 9.

Those who did not take their medications as prescribed were asked: “What would make it easier for you/your child to take

your/his/her allergy medications exactly as prescribed?” Fewer side effects (42%), lower cost (36%), and more convenient dosing schedule (33%) were key (Figure 10).

DISCUSSION

This is the first reported online survey for AR. Despite differences in survey methodologies and subject characteristics, the outcomes of the current survey support the findings of earlier questionnaires regarding patient perceptions of the expression, impact, and management of AR nasal and ocular symptoms (see Table 1).^{4,5,9,13-17} Before treatment, more than 50% of the SARC respondents experienced symptoms daily during an allergy month; 75% to 80% considered symptoms to be moderate or severe. Symptoms were reported as most severe in the spring, and in more than 50% of adults and children, seasonal nasal and/or



*Statistically significant at 95% confidence level

FIGURE 4. Physical and emotional impact of seasonal allergy (nasal/eye) symptoms. Base = all qualified respondents, N = 1001. Respondents were asked to select all that applied.

TABLE IV. Respondent ratings of how much their/their child's seasonal allergy symptoms (nasal/ocular) interfered with daily activities

Interfered	Productivity at work or school	Leisure/social activities	Sleep
A lot	28%	33%	38%
A little	49%	52%	49%
Not at all	24%	15%	13%

Note. The data apply to both adults and children (base = total respondents, N = 1001).

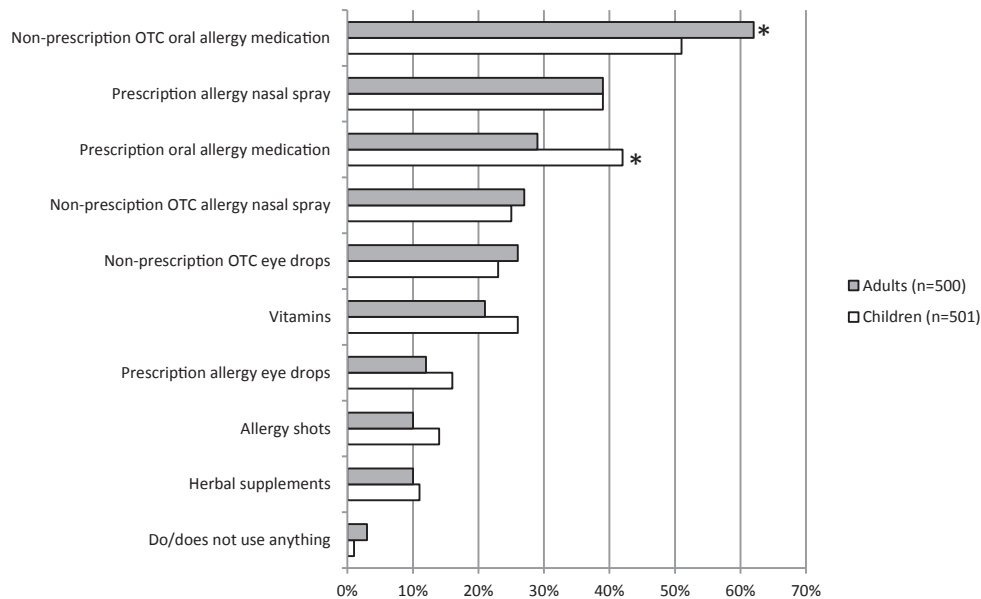
ocular symptoms negatively impacted the patient's (and family's) QoL. More than 90% reported disrupted sleep (40%, "a lot"). Exacerbation of comorbid conditions (eg, asthma, rhinosinusitis) by seasonal allergy symptoms was reported in the earlier surveys, but was not included in the current questionnaire. However, the consequence of worsening any of the many comorbidities further underscores the overall morbidity of AR.

This survey updates and expands information on treatment satisfaction from the patient's perspective. All treatments for SARC had relatively high satisfaction ratings, with immunotherapy the highest at 95% of respondents. Unfortunately, this was provided to only 10% of patients. Prescription medications, both oral and intranasal, had higher ratings than OTC medications. The satisfaction ratings for prescription oral and intranasal medications were very close: 83% and 77%, respectively, for adults, and 87% and 88% for children. The Allergies in America surveys also included questions on satisfaction with treatment, but focused on INCS. The responses were similar to those for prescription nasal sprays in the current study.^{9,15} Approximately 75% of adult patients with AR and 76% of pediatric respondents (parents and/or children) reported being somewhat or very

satisfied with their INCS treatment. Two parallel structured telephone surveys of 1001 adult patients with AR in Canada conducted in 2006 reported that 87% were satisfied with their INCS treatment.¹⁸

The higher satisfaction numbers for children in the current survey compared with the Pediatric Allergies in America data could reflect changes in treatment options, access, or knowledge, or might be due to differences in the subjects and how the data were recorded. The current survey included only children between the ages of 12 and 17 years with seasonal nasal/ocular allergy symptoms; the earlier study included children between the ages of 4 and 17 years with a physician's diagnosis of "nasal allergy." Sixty percent were younger than 12 years, and 62% identified as seasonal allergy patients.⁹ In that study, patients between 12 and 17 years old completed the survey along with a parent; data presented for the current study are from only the parent respondent.

The by-proxy assessment of patient symptom severity and/or treatment effect can differ from direct patient assessment. For example, in the Allergies in America survey adult patients and their HCPs were asked how satisfied they (or their patients) were with INCS treatment. More than 90% of HCPs reported that their patients were very or somewhat satisfied with treatment compared with 75% of patients.¹⁵ Likewise, parents and/or caregivers may have a different perspective of their teenager's morbidity and the impact of treatment. In a recently reported pediatric clinical trial of the intranasal combination of azelastine and fluticasone propionate, caregivers underestimated the effect of treatment on AR symptoms and QoL compared with independent evaluations completed by older children.¹⁹ This proxy confounder effect has been reported for other allergic diseases (eg, asthma, eczema), showing poor agreement between parent and child ratings of morbidity and therapeutic effect.^{20,21} The results of this survey



*Statistically significant at 95% confidence level

FIGURE 5. How patients generally managed their/their child's seasonal allergy (nasal/eye) symptoms. Base = all qualified respondents, N = 1001. Respondents were asked to select all that applied. *OTC*, Over the counter.

TABLE V. Allergy medications used by patients at the time of the survey

Medication class	Over the counter		Prescription	
	Adults (n = 358)	Children (n = 324)	Adults (n = 298)	Children (n = 322)
Oral antihistamine	60%	53%	26%	41%*
Nasal antihistamine [†]	20%	28%	34%	33%
Nasal corticosteroid	9%	11%	24%	19%
Oral decongestant	37%	32%	13%	27%*
Nasal decongestant	26%	32%	22%	18%
Combination medication [‡]	18%	23%	9%	22%
NSAID	9%	11%	7%	12%
Other	6%	3%	5%	6%
None	1%	5%*	5%	6%
Not sure	11%	7%	13%	7%

NSAID, Nonsteroidal anti-inflammatory drug, *OTC*, over the counter.

Note. Respondents were asked to indicate all that applied.

*Statistically significant compared with adult respondents at the 95% confidence level.

[†]Included despite no products currently on the OTC market in the United States.

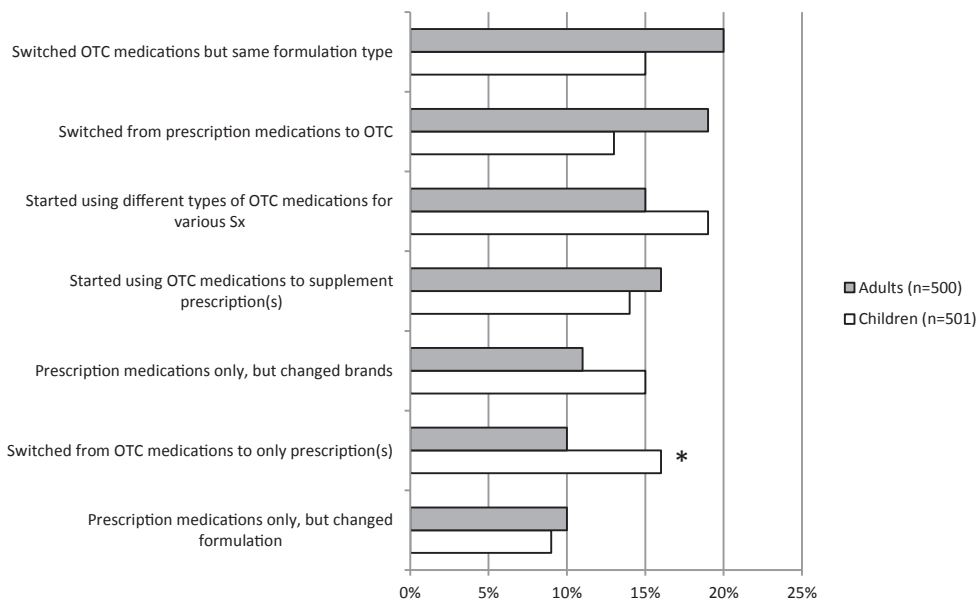
[‡]Specific combination drug product, or drug products, was not specified. It could have been interpreted as a single medication that contains 2 agents (eg, oral antihistamine/decongestant) or a single intranasal product containing 2 agents (eg, intranasal antihistamine/corticosteroid). It also could have been interpreted as using multiple medications or immunotherapy plus and oral medication.

support these earlier studies suggesting that children older than 11 years should complete their own questionnaires.^{19,20}

The reasons for potential dissatisfaction with treatment are the same as reported in earlier studies: incomplete symptom relief and/or perception of ineffectiveness, slow speed of onset, short duration of relief, and side effects remain key factors.^{9,15,18} Some product attributes (eg, bad taste or smell, drippiness related to

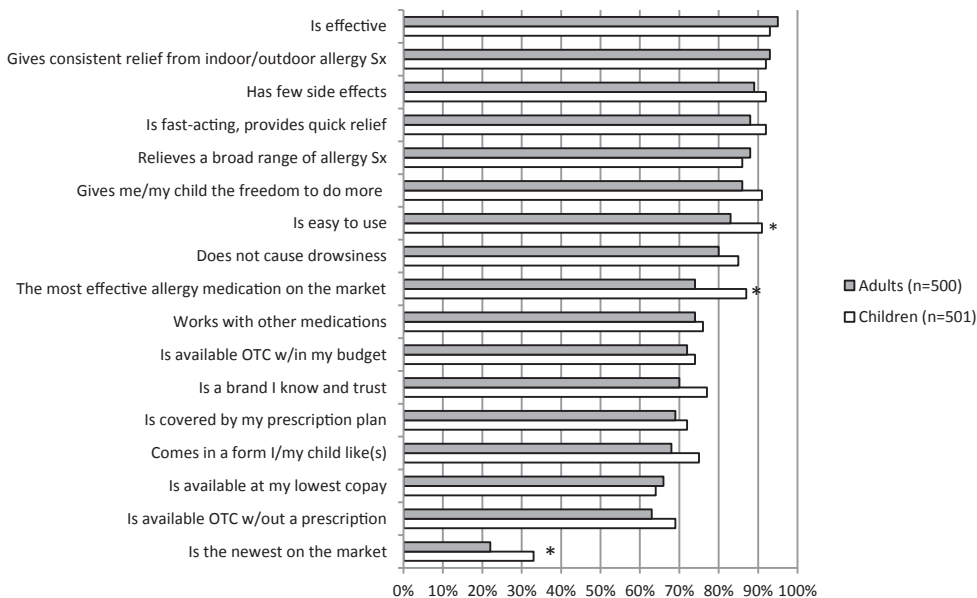
the fluid volume sprayed in the nose)—real or perceived—also may contribute to dissatisfaction and subsequently to changing, even stopping, treatment. Thus, change and discontinuation rates can provide an indirect measure of satisfaction.

The current survey indicates that patients using prescription medications were not only generally more satisfied with treatment effectiveness than patients taking OTC medications (approximately 80% vs 65%), but also were less likely to switch or discontinue their treatment (approximately 20% and 35%, respectively), supporting observations of greater treatment satisfaction with prescription medications. In part this may reflect better instruction in the clinician's office about how to use their medications, particularly nasal sprays—a factor that was not evaluated in the survey. Nonetheless, approximately 18% of respondents reported switching from prescription medications to solely using OTC medications, which may reflect changes in labeling and/or financial/insurance considerations. If so, the disparity between change rates for OTC and prescription medications may diminish over time as more prescription products become available OTC. Unfortunately, availability will not solve the problem of 20% to 35% of patients not perceiving the adequacy of their treatment. Approximately 70% of respondents in this survey reported that “available OTC and within budget” is an important criterion for an allergy medication. In terms of insurance coverage, approximately 70% of patients reported both “covered by my prescription plan” and “available at my lowest copay” as important criteria. Interestingly, and a cost consideration for patients, more patients reported that their prescription medications were covered by insurance (89%) and at the lowest copay (83%) as compared with medications available OTC and within budget (67%). Future surveys with similar queries will be needed to see if the treatment satisfaction difference between prescription and OTC medications lessens or remains the same with different access.



*Statistically significant at 95% confidence level

FIGURE 6. How patients’ medications for seasonal eye/nose allergy symptoms changed in recent years. Base = all qualified respondents, N = 1001. Respondents were asked to select all that applied. *OTC*, Over the counter; *Sx*, symptoms.



*Statistically significant at 95% confidence level

FIGURE 7. Percentage of patient rating criteria for allergy medication as important. Base = all respondents, N = 1001. *OTC*, Over the counter; *Sx*, symptoms.

Compared with adult respondents, children were less likely to switch from prescription to OTC medications (19% and 13%, respectively) and more likely to switch from OTC medications to using only prescription medications (10% and 16%, respectively). Children also were slightly more likely to have their prescription brands changed, with no difference between ages for switches in

formulations. Although changes between formulation and brand were not separated in the Allergies in America surveys, the data similarly suggested that children were more likely to have their prescription allergy medications changed than adults.^{9,15}

The majority of respondents in this survey reported initiating the discussion about treatment options and changing treatment

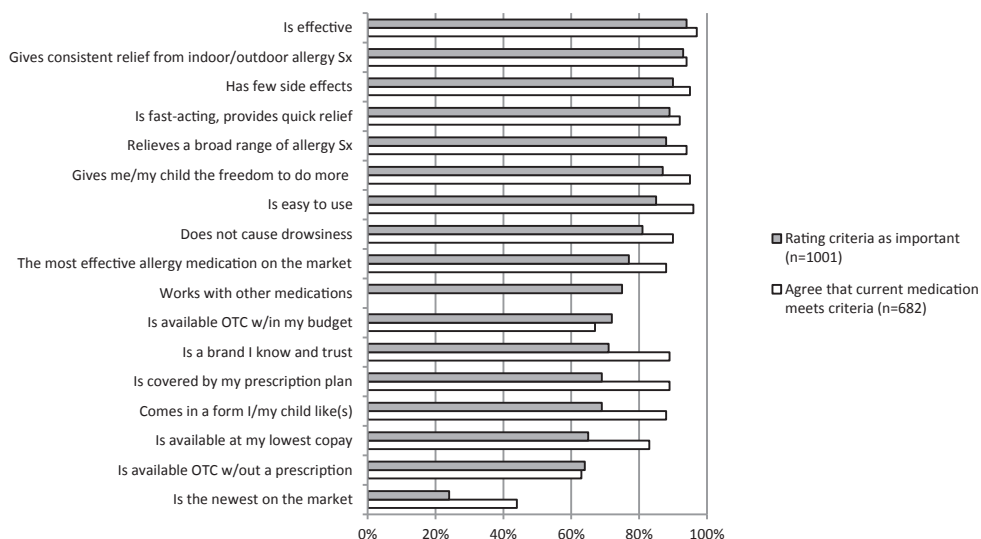


FIGURE 8. Percentage of patients indicating that their current medications for seasonal allergy symptoms meet the criteria ranked as important shown in comparison with the percentage rankings of criteria for allergy medications as important. Respondents were asked to select all that applied. *OTC*, Over the counter.

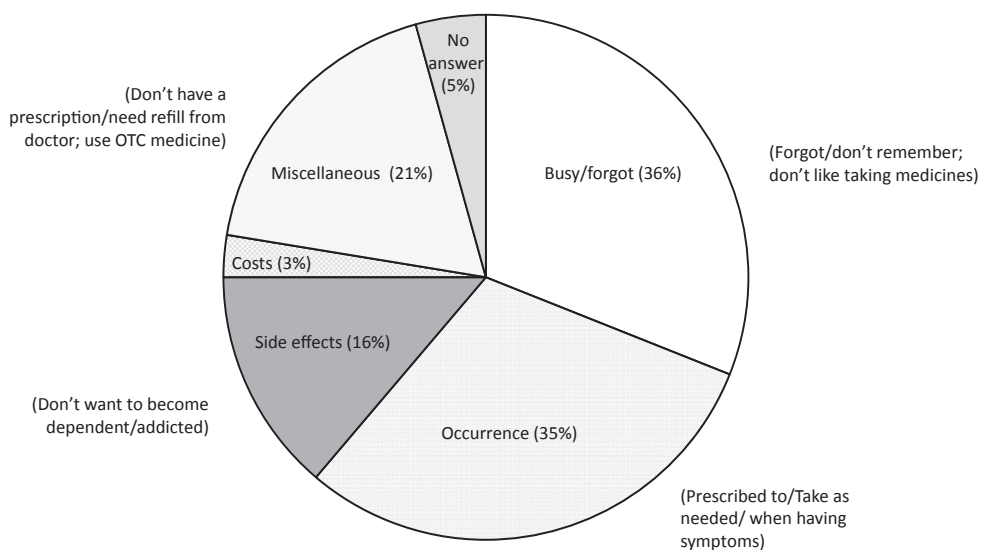


FIGURE 9. Reasons for not taking allergy medication as prescribed. The key within-group reasons reported by $\geq 5\%$ of respondents are shown in parentheses. Base = 343 respondents who indicated that they or their child did not take their allergy medication exactly as prescribed. *OTC*, Over the counter.

with their HCPs, a factor that could enhance treatment satisfaction by empowering the patient and/or parent to take the lead in managing their (child's) allergic disease. Symptoms and the negative impact of symptoms on daily life were the primary reasons given to initiate the conversation. It has been suggested that advertisements (TV, print, internet) or recommendations (from family, friends) are the key drivers for patients to initiate that discussion, but the results of this survey suggest otherwise.

Adherence with treatment for this population also appears to be symptom driven. Most respondents reported that they (or their child) typically take medications as prescribed or recommended, but are more likely to do so when experiencing

symptoms. Related to this, the more severe the patient's symptoms, the better the adherence. Given the relatively low rates of discontinuation of treatment and switching medications, it is relevant that the majority of patients reported that their medications met their identified "important criteria" for treatment, namely, completeness of symptom relief, quick onset of relief, long duration of relief, and minimal side effects. The key reasons for lack of adherence were "forgetfulness or dislike of taking medications" and "use only when needed."

The outcomes of this survey suggest that the patient-treatment paradigm may be improving. Compared with earlier surveys, it appears that patient expectations for treatment are being met to a

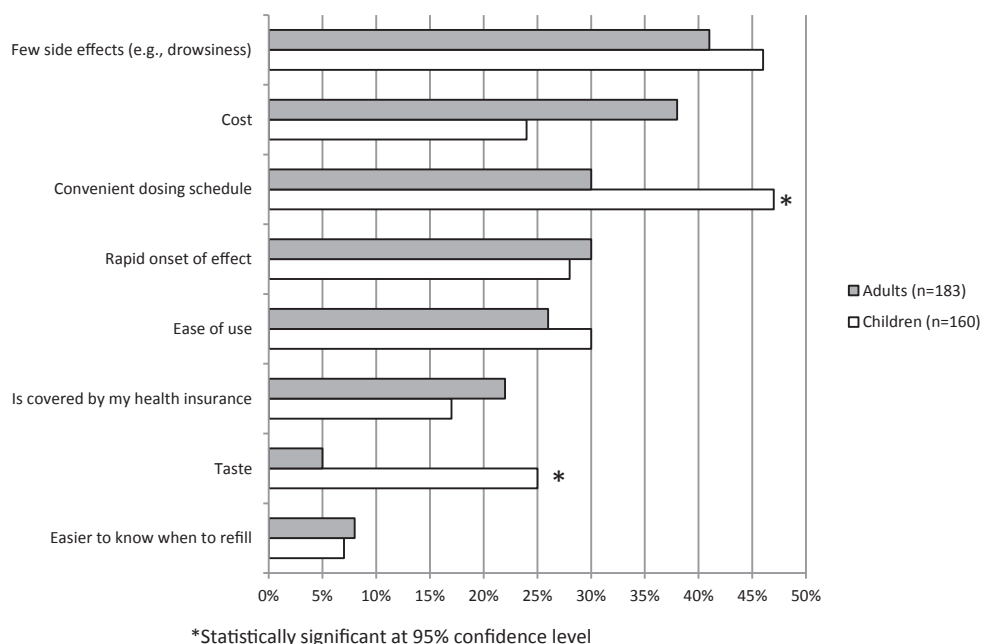


FIGURE 10. Respondent ratings of criteria that would make it easier for respondents or their child to take allergy medications exactly as prescribed. Base = 343 respondents who indicated that they or their child did not take their allergy medication exactly as prescribed.

greater extent. Whether this reflects the availability of “better” medications or whether HCPs are doing a better job of fine-tuning and explaining treatment for the individual patient is unclear. An important outcome of earlier surveys was a recommendation for patient education.^{4,5,9,13-18,22} In this survey, 55% of the respondents agreed, when asked, that seasonal allergies are a disease of the immune system, a concept that requires information, though it is not known whether the information came through the HCP or from some other source. Nonetheless, when a patient understands his or her disease, adherence and satisfaction with treatment improve.²³ A subanalysis of treatment satisfaction found that patients who identified seasonal allergies as a disease of the immune system were more likely to be satisfied with treatment compared with those who did not. Undeniably, there is a continuing need to educate patients and their families about SARC. It will be of interest to see if this trend in patient education continues and how it relates to patient adherence and satisfaction in future research.

Since the earlier surveys, pharmacists have taken on a larger role in patient care, and that is reflected here. Approximately 4% of the patients in this survey reported seeing a pharmacist at least once a year for treatment. This likely reflects the recent movement within the health care system from a primary care model to a retail clinic model as found in some other countries.²⁴ This model encourages pharmacists to be part of the primary health care team so that physicians can focus on more complex cases.²⁵ It is a topic that needs to be further explored as the implications for patient care are not clearly delineated.

This survey assessed the respondent’s (or child’s) symptom experience. It was entirely conducted by patient (or parent) perspective only, without physician oversight or guidance. Even diagnosis was based on respondent report without a requirement for current symptoms. Although lack of guidance may be

considered a positive for some queries, the fact that the questionnaire was entirely based on subjective responses without use of validated scales is an inherent limitation as is the fact that the respondent’s interpretation of some treatments (ie, “combination products,” “sprays”) was not defined. Whether or not respondents truly understood their medications is not clear. Although 20% of adults and 28% of children were reported as using OTC INAH, there currently are no such products available in the US market. Also, as noted earlier, parent respondents may have a different perspective of their teen child’s morbidity.

Other limitations are those related to the conduct of surveys. The study sample may not represent a random sample of SARC sufferers in the United States; respondents were recruited from a mass mailing and then balanced and weighted to reflect all US patients with SARC. Those who responded might be more likely to do so if they had a recent bout of symptoms or were symptomatic. This was not evaluated. Related to this, the survey was conducted in early March—mid-spring hay fever season in some regions. Patients in those regions, likely to be symptomatic or to have more severe symptoms, might have been more likely to respond and to seek care. However, because this retrospective analysis had no requirement as to when patients were last symptomatic, differences in recall time between symptoms and survey completion might also have skewed the data. The study was conducted online, possibly excluding potential subjects without computer access.

The response rate for this survey was low: 1.2% (1,001 of 79,839 households contacted by email). This may also reflect the online nature of the survey, though response rates for telephone surveys have varied broadly, from 1.4% for the Pediatric Allergies in America survey⁹ to as high as 25.7% for the Burden of Rhinitis in America survey.¹³ Nonetheless, the findings of this study are similar to those of earlier surveys confirming the

severity of symptoms by season and that the impact of SARC symptoms on QoL and productivity for the affected individual is significant. Despite the continued unmet needs for a still substantial percentage of the population with SARC, there appear to be some points of encouragement with regard to satisfaction with treatment and increased patient responsibility for management. Continued efforts to better understand this disease and its consequences, to increase access to therapy and make available newer medications, and to deal with the challenges of management still have the potential to further improve control of the disease and positively modify its outcomes. Future surveys will be necessary to confirm these trends.

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APPENDIX E1. SURVEY QUESTIONS FOR US RESPONDENTS**Background****Base: all respondents.**

Q268 Are you...?

- 1 Male
- 2 Female

Base: all respondents.

Q270 In what year were you born? Please enter your response as a 4-digit number (eg, 1977).

Base: all respondents age 18+.

Q600 How many children between the ages of 12 and 17, for who you are the parent or guardian, live in your household?

Base: all respondents age 18+ who have children.

Q605 Next, we would like to find out the age and gender of each child between the ages of 12 and 17 in your household for who you are the parent or legal guardian. For each child below, please enter his or her age and gender.

Base: all respondents age 18+.

Q610 Have you, or any of your children aged 12-17, been told by a doctor (diagnosed) that you have any of the following conditions?

- 1 Year round nasal allergies (perennial allergic rhinitis)
- 2 Seasonal nasal allergies (seasonal allergic rhinitis)
- 3 Asthma
- 4 Obesity/overweight
- 5 Depression
- 6 Attention deficit disorder
- 7 Anxiety disorders
- 8 Cancer
- 9 Diabetes
- 10 Sleep disorders
- 11 None of these

Base: child has been diagnosed with seasonal allergies.

Q4004 You told us that your child has seasonal nasal allergies (allergic rhinitis). For the purposes of this study, please think about that child when answering the questions in this survey. If you have more than one child in your family with seasonal allergies, please think specifically about your [AGE AND GENDER OF CHILD SUFFERER] when answering the questions in this survey.

Base: respondent, age 18+, and/or child aged 12-17 suffers from seasonal allergies.

Q4005 You mentioned that ["you have" OR "your child has"] been diagnosed with the following. Which have you sought treatment for from a medical professional in the past year?

- 1 Year round nasal allergies (perennial allergic rhinitis)
- 2 Seasonal nasal allergies (seasonal allergic rhinitis)

- 3 Asthma
- 4 Obesity/overweight
- 5 Depression
- 6 Attention deficit disorder
- 7 Anxiety disorders
- 8 Cancer
- 9 Diabetes
- 10 Sleep disorders
- 11 None of these

Main Survey—About Their Condition**Base: all qualified respondents.**

Q105 When [{"do you"} OR {"does your child"}] experience seasonal allergy (nasal and/or eye) symptoms? Please select all that apply.

- 1 Spring
- 2 Summer
- 3 Fall
- 4 Winter

Base: all qualified respondents.

Q110 Now, we would like to get a clearer picture of the allergies that [{"you have"} OR {"your child has"}] and the severity. What kinds of things trigger the seasonal allergy symptoms [{"you have"} OR {"your child has"}]? Please select all that apply.

- 1 Tree pollen
- 2 Grass pollen
- 3 Weed pollen
- 4 Mold spores
- 5 Other—specify
- 6 Do not know

Base: all qualified respondents.

Q115 When are [{"your"} OR {"your child's"}] seasonal allergy symptoms the worst? Please select one.

- 1 Spring
- 2 Summer
- 3 Fall
- 4 Winter

Base: all qualified respondents.

Q120 Generally, how would you classify [{"your"} OR {"your child's"}] allergy symptoms for each season? 1, Mild; 2, Moderate; 3, Severe

- 1 Spring
- 2 Summer
- 3 Fall
- 4 Winter

Base: all qualified respondents.

Q130 When experiencing seasonal allergy symptoms, how frequently [{"do you"} OR {"does your child"}] suffer from them?

- 1 Less than once a month
- 2 Monthly
- 3 Weekly
- 4 Daily

Base: all qualified respondents.

Q135 At what age [(“were you”) OR (“was your child”)] first diagnosed with seasonal allergies?

Base: all qualified respondents.

Q140 What is the most bothersome allergy symptom that [(“you seek”) OR (“your child seeks”)] treatment for? Please select one.

- 1 Runny nose
- 2 Stuffy nose
- 3 Itching
- 4 Itchy eyes
- 5 Congestion
- 6 Sneezing
- 7 Headaches/sinus pain
- 8 None of these

Base: all qualified respondents.

Q145 Which of the following words, if any, describe how [(“you feel”) OR (“your child feels”)] when suffering from seasonal allergy (nasal and/or eye) symptoms? Please select *all* that apply.

- 1 Angry
- 2 Unhappy
- 3 Distracted
- 4 Having poor concentration
- 5 Embarrassed
- 6 Frustrated
- 7 Irritable
- 8 Tired
- 9 Upset
- 10 Unattractive
- 11 Unproductive/having reduced productivity
- 12 Unable to perform at [(“my”) OR (“his or her”)] best
- 13 Less confident
- 14 Indifferent/don't care
- 15 None of these

Base: all qualified respondents.

Q150 At what age did [(“you”) OR (“your child”)] first start taking medications to treat [(“your”) OR (“his or her”)] seasonal allergy (nasal and/or eye) symptoms?

Base: all qualified respondents.

Q155 The next few questions are about [(“your”) OR (“your child's”)] allergies when [(“you don't”) OR (“he or she doesn't”)] take [(“your”) OR (“his or her”)] allergy medication. Please think back to those times when [(“you have not taken your”) OR (“your child has not taken his or her”)] seasonal allergy medications. How would you describe [(“your”) OR (“his or her”)] symptoms?

- 1 Mild
- 2 Moderate
- 3 Severe

Base: all qualified respondents.

Q160 Using the scale below, how severe would you say each of the following allergy symptoms is when [(“you have”) OR

(“your child has”)] not taken medication to treat it? 1, Not at all severe; 2, Mildly severe; 3, Very severe

- 1 Nasal congestion
- 2 Runny nose
- 3 Stuffy Nose
- 4 Sneezing
- 5 Itching
- 6 Itchy eyes
- 7 Headaches/sinus pain

Base: all qualified respondents.

Q165 Using the scale below, how much do [(“your”) OR (“your child's”)] seasonal allergy symptoms (nasal and/or eye) interfere with each of the following? 1, Not at all; 2, A little; 3, A lot

- 1 Productivity at work or school
- 2 Leisure/social activities
- 3 Sleep

Base: allergies interfered with work or school.

Q170 Allergies can often make people feel that they are less productive at work or school. During a month when [(“you typically suffer”) OR (“your child typically suffers”)] from seasonal allergies (nasal and/or eye), how many days of work or school would you say [(“you were”) OR (“your child was”)] less productive than [(“you usually are”) OR (“your child usually is”)] on account of [(“your”) OR (“their”)] seasonal allergies?

- 1 None
- 2 1-5 days
- 3 6-10 days
- 4 11-20 days
- 5 21-30 days
- 6 Don't know

Main Survey—Treatment Options, Awareness, and Usage**Base: all qualified respondents.**

Q200 [(“Have you”) OR (“Has your child”)] seen a doctor and been tested for seasonal allergies?

- 1 Yes
- 2 No

Base: all qualified respondents.

Q205 What took place before [(“you”) OR (“your child”)] visiting the doctor to get tested for seasonal allergies (nasal and/or eye)? Please select *all* that apply.

- 1 [(“I”) OR (“My child”)] suffered from some seasonal allergy symptoms such as itchy eyes, runny nose, and sneezing.
- 2 [(“I”) OR (“My child”)] tried some over-the-counter products based on advertising I saw about seasonal allergy symptoms.
- 3 [(“I”) OR (“My child”)] tried some over-the-counter products based on a friend's recommendation.
- 4 [(“I”) OR (“My child”)] tried some over-the-counter products based on a pharmacist's recommendation.

- 5 [(“I”) OR (“My child”)] tried some over-the-counter products based on reading the labels of multiple products in the store.
- 6 [(“I”) OR (“My child”)] had to take time off of work/school because symptoms were so bad.
- 7 None of these.

Base: all qualified respondents.

- Q210 Which, if any, of the following doctors or health care professionals have you seen about [(“your”) OR (“your child’s”)] seasonal allergy symptoms (nasal and/or eye)? Please select *all* that apply.
- 1 Primary care physician
 - 2 Allergy specialist
 - 3 Ear, nose, and throat specialist
 - 4 Pediatrician
 - 5 Pharmacist
 - 6 Nurse practitioner
 - 7 Other health care professional
 - 8 None

Base: all qualified respondents.

- Q215 Which of the following doctors/health care professionals, if any, are currently treating [(“your”) OR (“your child’s”)] seasonal allergy symptoms (nasal and/or eye)? Please select *all* that apply.
- 1 Primary care physician
 - 2 Allergy specialist
 - 3 Ear, nose, and throat specialist
 - 4 Pediatrician
 - 5 Pharmacist
 - 6 Nurse practitioner
 - 7 Other health care professional—specify
 - 8 None

Base: all qualified respondents.

- Q220 True or false; seasonal allergies are a disease of the immune system. Please select *one*.
- 1 True
 - 2 False

Base: all qualified respondents who have seen a health care professional.

- Q225 How often do [(“you go”) OR (“you take your child”)] to each of the following health care professionals listed below due to [(“your”) OR (“your child’s”)] seasonal allergy symptoms (nasal and/or eye)?
- 1 Once a year or less often
 - 2 2-3 times a year
 - 3 4-6 times a year
 - 4 7-11 times a year
 - 5 More than once a month
- 1 Primary care physician
 - 2 Allergy specialist
 - 3 Ear, nose, and throat specialist
 - 4 Pediatrician
 - 5 Pharmacist
 - 6 Nurse practitioner
 - 7 [OTHER FROM SPECIFY AT Q215]

Base: all qualified respondents.

- Q230 When talking to your doctor about prescription treatments for [(“your”) OR (“your child’s”)] seasonal allergies (nasal and/or eye), who initiates the discussion about different treatment options/choices? Please select only *one* answer.
- 1 I initiate the discussion.
 - 2 I initiate the discussion after seeing a TV ad for a specific prescription allergy medication.
 - 3 I initiate the discussion after seeing a print ad for a specific prescription allergy medication.
 - 4 I initiate the discussion after seeing an internet ad for a specific prescription allergy medication.
 - 5 I initiate the discussion after a recommendation from a friend or family member.
 - 6 My doctor initiates the discussion.

Base: all qualified respondents.

- Q235 How [(“do you”) OR (“does your child”)] generally manage [(“your”) OR (“his or her”)] seasonal allergy symptoms (nasal and/or eye)? Please select *all* that apply.
- 1 Allergy shots
 - 2 Prescription oral allergy medication
 - 3 Prescription allergy nasal spray
 - 4 Prescription allergy eye drops
 - 5 Nonprescription/over-the-counter oral allergy medication
 - 6 Nonprescription/over-the-counter allergy nasal spray
 - 7 Nonprescription/over-the-counter allergy eye drops
 - 8 Vitamins
 - 9 Herbal supplements
 - 10 [(“I don’t take”) OR (“My child does not take”)]/use anything

Base: all qualified respondents who use at least one medication to treat seasonal allergy symptoms.

- Q240 How satisfied are you with the effectiveness of each of the following types of medication [(“you use”) OR (“your child uses”)] to relieve [(“your”) OR (“his or her”)] seasonal allergy symptoms? Scale: 1, Not at all satisfied; 2, Somewhat satisfied; 3, Satisfied; 4, Very satisfied; 5, Extremely satisfied
- 1 Allergy shots
 - 2 Prescription oral allergy medication
 - 3 Prescription seasonal nasal spray
 - 4 Prescription allergy eye drops
 - 5 Nonprescription/over-the-counter oral allergy medication
 - 6 Nonprescription/over-the-counter seasonal spray
 - 7 Nonprescription/over-the-counter allergy eye drops

Base: all qualified respondents.

- Q245 Which of the following type(s) of allergy medication [(“are you”) OR (“is your child”)] using? Please select *all* that apply. Indicate: 1, Over-the-counter; 2, Prescription
- 1 Oral antihistamine
 - 2 Nasal antihistamine
 - 3 Nasal corticosteroid
 - 4 Oral decongestant

- 5 Nasal decongestant
- 6 Nonsteroidal anti-inflammatory
- 7 Combination medicines
- 8 Other
- 9 None
- 10 Not sure

Base: all qualified respondents.

Q250 How has the treatment of [(“your”) OR (“your child’s”)] seasonal allergy symptoms (nasal and/or eye) changed in recent years? Please select *one*.

- 1 [(“I have”) OR (“My child has”)] only ever taken medications prescribed by [(“my”) OR (“his or her”)] doctor, but the brand of medication has changed over time.
- 2 [(“I have”) OR (“My child has”)] only ever taken medications prescribed by [(“my”) OR (“his or her”)] doctor, but the form of medication has changed over time (eg, from oral medication to nasal sprays or vice versa).
- 3 [(“I have”) OR (“My child has”)] begun taking over-the-counter medications to supplement the prescriptions [(“my”) OR (“his or her”)] doctor has prescribed.
- 4 [(“I have”) OR (“My child has”)] [(“I have”) OR (“My child has”)] switched from taking prescription medications to using only over-the-counter medications.
- 5 [(“I have”) OR (“My child has”)] [(“I have”) OR (“My child has”)] switched brands of over-the-counter medication but [(“am”) OR (“is”)] using the same type of medication (eg, nasal spray, oral medication, etc.).
- 6 [(“I have”) OR (“My child has”)] switched from taking only over-the-counter medications to using only those prescribed by a doctor.
- 7 [(“I have”) OR (“My child has”)] started taking different kinds of over-the-counter medication to treat [(“my”) OR (“their”)] various symptoms.

Base: all qualified respondents.

Q255 When do you typically re-evaluate the care [(“you receive”) OR (“your child receives”)] for seasonal allergies (nasal and/or eye)? Please select *all* that apply.

- 1 At the beginning of every allergy season
- 2 Only when changes are made to [(“my”) OR (“my child’s”)] health insurance
- 3 When [(“I change”) OR (“my child changes”)] primary care physicians
- 4 When symptoms are no longer managed with current care
- 5 None of the above

Base: all qualified respondents.

Q260 When [(“do you”) OR (“does your child”)] typically start taking [(“your”) OR (“his or her”)] medication to treat [(“your”) OR (“their”)] seasonal allergy symptoms (nasal and/or eye)? Please select *one*.

- 1 Before allergy season starts
- 2 At the start of [(“my”) OR (“their”)] allergy season before any symptoms start

- 3 Only when [(“I have”) OR (“my child has”)] symptoms
- 4 When symptoms first arise and continue taking until they subside
- 5 Every day to ward off symptoms
- 6 Constantly, [(“I always seem”) OR (“my child always seems”)] to be on some type of seasonal allergy medication.

Base: all qualified respondents.

Q265 Which of the following is closer to [(“your”) OR (“your child’s”)] situation? Please select *one*.

- 1 [(“I only take”) OR (“My child only takes”)] medications to treat [(“my”) OR (“their”)] seasonal allergies that [(“my”) OR (“their”)] doctor prescribes or over-the-counter medication that [(“my”) OR (“their”)] doctor or pharmacist recommends.
- 2 [(“I take”) OR (“My child takes”)] some medications [(“my”) OR (“their”)] doctor prescribes or recommends but sometimes add over-the-counter medications to treat specific symptoms.
- 3 [(“I take”) OR (“My child takes”)] over-the-counter medications that I choose without the benefit of [(“my”) OR (“their”)] doctors’ recommendation.
- 4 None of these

Base: uses prescription medications.

Q270 Would you say the prescription medications [(“you take”) OR (“your child takes”)] for [(“your”) OR (“his or her”)] seasonal allergies (nasal and/or eye) have become more or less expensive over the last year?

- 1 More expensive
- 2 Less expensive
- 3 About the same

Base: uses over-the-counter medications.

Q275 Would you say the over-the-counter medications [(“you take”) OR (“your child takes”)] for [(“your”) OR (“his or her”)] seasonal allergies (nasal and/or eye) have become more or less expensive over the last year?

- 1 More expensive
- 2 Less expensive
- 3 About the same

Base: all qualified respondents.

Q280 How important is it to you that [(“your”) OR (“your child’s”)] seasonal allergy medication (nasal and/or eye) meets each of the following criteria? Scale: 1, Not at all important; 2, Somewhat important; 3, Very important; 4, Extremely important

- 1 Is the newest on the market
- 2 Is the most effective allergy medication on the market
- 3 Is effective
- 4 Gives [(“me”) OR (“my child”)] the freedom to do more of what [(“I”) OR (“they”)] want to do
- 5 Is fast acting/provides quick relief
- 6 Does not cause drowsiness
- 7 Relieves a broad range of allergy symptoms
- 8 Is easy to use
- 9 Has few side effects

- 10 Is a brand I know and trust
- 11 Provides consistent relief from [(“my”) OR (“my child’s”)] indoor and outdoor allergy symptoms
- 12 Is covered by my prescription plan
- 13 Is available at my lowest copay
- 14 Is available over the counter and without a doctor’s prescription
- 15 Is available over the counter and is within my budget
- 16 Works with other medications to provide treatment
- 17 Comes in a form [(“I like”) OR (“my child likes”)]

Base: Currently using seasonal allergy medications.

Q285 Thinking about the medications [(“you take”) OR (“your child takes”)], how strongly do you agree or disagree that your current prescription seasonal allergy medication meets each of the following criteria? Scale: 1, Strongly disagree; 2, Somewhat disagree; 3, Somewhat agree; 4, Strongly agree

- 1 Is the newest on the market
- 2 Is the most effective allergy medication on the market
- 3 Is effective
- 4 Gives [(“me”) OR (“my child”)] the freedom to do more of what [(“I”) OR (“they”)] want to do
- 5 Is fast acting/provides quick relief
- 6 Does not cause drowsiness
- 7 Relieves a broad range of allergy symptoms
- 8 Is easy to use
- 9 Has few side effects
- 10 Is a brand I know and trust
- 11 Provides consistent relief from [(“my”) OR (“my child’s”)] indoor and outdoor allergy symptoms
- 12 Is covered by my prescription plan
- 13 Is available at my lowest copay
- 14 Is available over the counter without a doctor’s prescription
- 15 Is available over the counter and is within my budget
- 16 Comes in a form [(“I like”) OR (“my child likes”)]

Main Survey — Compliance

Base: all qualified respondents.

Q300 Is the way [(“you take”) OR (“your child takes”)] [(“your”) OR (“his or her”)] allergy medications exactly as the doctor prescribed (eg, taken daily or 2 times per day as the doctor indicated)?

- 1 Yes, [(“I always take”) OR (“my child always takes”)] [(“my”) OR (“his or her”)] allergy medications exactly as the doctor prescribed.
- 2 No, [(“I try”) OR (“my child tries”)] to take [(“my”) OR (“his or her”)] antiallergy medications as prescribed, but sometimes [(“I am”) OR (“he or she is”)] not able to.
- 3 No, [(“I take”) OR (“he or she takes”)] [(“my”) OR (“his or her”)] antiallergy medications only when [(“I have”) OR (“my child has”)] symptoms.

Base: does not take medications as prescribed.

Q305

Why [(“don’t you take”) OR (“doesn’t your child take”)] [(“your”) OR (“his or her”)] allergy medication as prescribed?

[OPEN END TEXT BOX]

TABLE E1. Frequency with which patients saw their health care professional for their seasonal nasal and/or ocular allergy symptoms

Health care professional	Adults	Children
Primary care		
Primary care physician	n = 280	n = 185
≤1×/y	34%	23%
2-3×/y	47%	44%
4-6×/y	12%	27%*
7-11×/y	6%	5%
≥1×/mo	0	1%
Pediatrician	n = 2	n = 156
≤1×/y	77%	23%
2-3×/y	23%	54%
4-6×/y	—	17%
7-11×/y	—	3%
≥1×/mo	—	2%
Nurse practitioner	n = 33	n = 31
≤1×/y	33%	24%
2-3×/y	37%	40%
4-6×/y	11%	17%
7-11×/y	19%	16%
≥1×/mo	1%	4%
Allergy or ear, nose, throat specialist		
Allergy specialist	n = 70	n = 110
≤1×/y	32%	21%
2-3×/y	30%	36%
4-6×/y	20%	23%
7-11×/y	6%	10%
≥1×/mo	12%	10%
Ear, nose, throat specialist	n = 44	n = 41
≤1×/y	45%	26%
2-3×/y	45%	42%
4-6×/y	5%	21%
7-11×/y	2%	3%
≥1×/mo	3%	7%
Other		
Pharmacist	n = 20	n = 18
≤1×/y	17%	19%
2-3×/y	50%	61%
4-6×/y	16%	18%
7-11×/y	9%	2%
≥1×/mo	7%	—
Specified by respondent†	n = 16	n = 3
≤1×/y	47%	—
2-3×/y	37%	51%
4-6×/y	16%	49%
7-11×/y	—	—
≥1×/mo	—	—

*Statistically significant compared with adult respondents at the 95% confidence level.

†Included asthma specialist, dermatologist, homeopath, internist, neurologist, ophthalmologist, physician assistant, and pulmonologist as specified by respondents.

Base: does not take medications as prescribed.

Q306 What would make it easier for [(“you”) OR (“your child”)] to take [(“your”) OR (“his or her”)] allergy

medications exactly as prescribed? Please select *all* that apply.

1 Cost

2 Easier to know when to refill

3 Taste

4 Ease of use

5 Convenient dosing schedule

6 Few side effects (eg, drowsiness)

7 Rapid onset of effect

8 Is covered by my health insurance