

Understanding the role of the healthcare professional in patient self-management of allergic rhinitis

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Abstract

Objective: Allergic rhinitis is a common, usually long-standing, condition that may be self-diagnosed or have a formal diagnosis. Our aim was to identify how allergic rhinitis sufferers self-manage their condition.

Methods: A sample of 276 self-identified adult allergy sufferers pooled from social media completed an online survey comprising 13 questions. The survey was fielded by a professional research organization (Lab42). The main outcome measures included the use of prescription and/or non-prescription allergy medication, and interactions with physician and/or pharmacist with respect to medication use.

Results: Of the respondents, 53% (146/276) indicated that they used both prescription and over-the-counter medication to manage their allergy symptoms. Of those who used prescription medication, 53% reported that they discussed their prescription medication in great detail with their physician when it was prescribed, while 42% spoke about it briefly. Following the initial prescription, few discussions about the prescription occur with the physician (45% indicate several discussions, 40% indicate one or two discussions, and 10% indicate no discussions). In most cases (~75% of the time), allergy prescription refills did not require a doctor visit with patients obtaining refills through phone calls to the doctor's office or through the pharmacy. Two-thirds of patients (69%) report that they have discussed their prescription allergy medication with a pharmacist, with greater than half of respondents having discussed the use of the non-prescription medication with their doctor.

Conclusion: Patients with diagnosed allergic rhinitis appear to be self-managing their condition with few interactions with their doctor about their allergy prescription. Interactions with a pharmacist about allergy medication (prescription and non-prescription) appear to be more common than interactions with a physician.

Keywords

Allergy, pharmacist, non-prescription, prescription, interactions, psychosocial

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Introduction

Self-care and disease self-management have been shown to improve adherence and disease outcomes, reducing the burden on health services.¹⁻³ The World Health Organization (WHO) defines self-care as activities that individuals, families, and communities undertake with the intention of enhancing health, preventing disease, limiting illness, and restoring health.³ Medication knowledge and adherence is one of the most important elements of self-management, particularly knowing when and how to utilize prescription and over-the-counter (OTC) medicines. Self-management, including increased OTC

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medication usage, is becoming more common in places like the United States where patients can experience significant out-of-pocket or direct expenses with time lost from work for physician visits and prescription medication costs. There is also increasing recognition that shared responsibility among primary care providers, pharmacists, and patients can ensure appropriate, safe, and cost-effective medication use.⁴ While it is common for patients to use OTC medicines without the supervision of healthcare professionals, limiting the opportunity for ongoing patient follow-up and safety monitoring, many are now seeking the advice and counsel of pharmacists to help self-manage their disease conditions regardless of the medication type, prescription or OTC.^{5,6}

To better understand patient behavior regarding disease self-management, as well as the role of physicians and community pharmacists, we investigated the amount of interaction patients have with their physician when they obtain or refill a prescription to manage the symptoms of allergic rhinitis (AR). AR is a common symptomatic disorder affecting 10%–20% of the North American population; it is usually a long-standing condition, which can be intermittent or persistent, that may be self-diagnosed or have a formal diagnosis.^{7,8} Symptoms associated with AR tend to have a significant impact on many aspects of daily life and lifestyle, impacting work productivity, sleep, as well as social interactions.^{8–10} Clinical evaluation has been shown to lead to a clinical management plan that identifies specific risk factors/allergen sensitivities and alleviates symptoms, improving quality of life.^{8,11} Symptom relief includes allergen avoidance, combined with the use of oral antihistamines, intranasal corticosteroids, leukotriene receptor antagonists, saline nasal douching, and allergen immunotherapy.¹¹

Of significance, AR has historically not been recognized as a significant condition/disease by healthcare professionals, as it was not perceived to be associated with a high rate of morbidity and mortality.^{8,12} However, AR symptoms, particularly if untreated or inadequately treated, have been shown to be associated with decreased health-related quality of life (HRQoL) impacting patients' sleeping habits, energy levels, ability to focus, and overall cognitive function, ultimately leading to missed work or school days, with significant costs to employers due to decreases in productivity and work performance.^{8,11,13,14} One study demonstrated that regardless of who manages the patient (family physician, allergist, or patient self-managed), AR symptoms can still significantly impact the patient's ability to engage in productive work and their HRQoL.¹⁵ This impact of symptoms, regardless of who manages the condition, suggests that patients may be well positioned, with appropriate guidance from a healthcare professional, to self-manage their allergy symptoms. To better understand how AR is self-managed, we investigated current behaviors of allergy sufferers including the role of physicians and community pharmacists in patient self-medication in the United States.

Methods

Study design and setting

This pilot study was based on an online survey of a random sample of 276 US adult allergy sufferers who self-identified that they use prescription medications for their condition. A professional research organization (Lab42) recruited adults aged 18–64 years randomly as they interacted with online social media to participate in an anonymous and voluntary online survey. Respondents received virtual currency as an incentive to participate. The criteria for participation were self-reported history of allergies and treatment of allergies with prescription medications. The term allergies and not AR were used in the survey as these terms are used interchangeably in the general population, with the term allergies being the more commonly understood.

These allergy sufferers completed an online survey developed in consultation with the research organization Lab42. The survey comprised 13 questions divided into two sections: (1) current medication usage including prescription and OTC products and (2) role of physician and community pharmacists in patient self-care and self-medication of AR. The survey questions were designed to collect factual information about allergy treatment and interactions with healthcare professionals. No effort was made to collect psychometric data that would require validation and reliability testing.

The research performed herein is considered Institutional Review Board (IRB) exempt as it involves research in which persons chose, and were compensated for, completing an online survey. The information obtained is recorded in a manner that is de-identified and may not be linked to individual survey respondents. The study was considered to be IRB exempt as it was conducted under the Marketing Research Association (MRA) Code of Marketing Research Standard with no individually identifiable human subjects.

Statistical analysis

Since there were no significant differences between the different prescribed medications, we pooled all participants who indicated that they were taking prescription medication. This was also done for the non-prescription groups. Thus, data analyses were performed to compare participants' overall responses with regard to their allergy prescription and/or non-medication prescription. Socio-demographic information such as race, age, gender, education, and annual wage were also obtained and considered in the analysis. We performed chi-square tests with contingency tables, using IBM SPSS Software, version 21 (SPSS Inc., Chicago, IL, USA), to identify any significant difference between groups. Expected cell frequency conditions were met through pooling the data. Proportions and residuals within each cell were compared for significance of $p < 0.05$.

Results

Characteristics of the study population

A total of 276 social media users indicated that they were allergy sufferers and completed the online survey. Socio-demographic data of the respondents are shown in Table 1. A total of 91% of respondents were under the age of 50 years. Comparisons looked at participants younger than 30 years of age (56.9%) versus participants older than 30 years of age (42.8%).

Medication usage and role of healthcare professional

Of the respondents, 53% indicated that they used both prescription and OTC medication to treat their allergy symptoms, utilizing a broad range of medication options. Looking specifically at prescription medication, usage about half of the patients (53%) reported that they discussed their prescription medication in great detail with their physician when it was prescribed, while 42% spoke only briefly with the physician about the prescription medication (Figure 1).

However, following the initial prescription few discussions about the prescription allergy medication occurred with the physician (45% indicate several discussions, 40% indicate one or two discussions, and 10% indicate no discussions) (Figure 2).

Considering patient socio-demographics, just over two-thirds of patients (69%), making over US\$50,000 per year, indicate that they have discussed their prescription allergy medication with a pharmacist (Figure 3).

The data also suggest that allergy prescription refills do not require a physician visit or direct interaction with a healthcare professional with most patients obtaining prescription refills through phone calls either to the doctor's office or to the pharmacy (~75% of the time) (Figure 4).

Looking at the non-prescription medication data, it appears that greater than half of respondents have discussed the use of the non-prescription medication with their doctor.

The participant demographic information was examined in more depth to determine whether any trends or significant differences existed in how participants interacted with physicians compared with pharmacists about their allergy medication. Looking at gender first, it appears that men, more than women, discuss their prescription allergy medication with the pharmacist (71% vs 56%, $p=0.020$). Whereas, the data further suggest that women tend to speak more with their physicians about their prescription medication. Considering income next, it appears that individuals with an income >US\$50,000 (vs <US\$50,000) tend to speak with healthcare professionals, particularly pharmacists, about their allergy medications; with 69% versus 57% ($p=0.047$) more likely to discuss their prescription allergy medication with pharmacist, and 82% versus 58% ($p=0.004$) more likely to discuss their non-prescription allergy medication

Table 1. Socio-demographic characteristics of 276 respondents.

	Number (%)
Age (years), N=276	
>18	25 (9.1)
18–29	132 (47.8)
30–49	93 (33.7)
50–69	23 (8.3)
>70	2 (0.7)
Ethnicity	
Asian/Pacific Islander	35 (12.7)
Black/African-American	54 (19.6)
Caucasian	120 (43.5)
Hispanic	24 (8.7)
Native American/Alaska Native	8 (2.9)
Other/multi-racial	12 (4.3)
Decline to respond	23 (8.3)
Education	
High school or below	84 (30.0)
Some college or trade	72 (24.0)
First degree (Associate, Bachelors)	74 (27.0)
Second degree (Masters, Doctorate, Law, Medical)	46 (17.0)
Employment status	
Full-time	110 (39.9)
Part-time	55 (19.9)
Student	50 (18.1)
Retired	15 (5.4)
Unemployed	46 (16.7)
Family monthly income	
Less than US\$25,000	81 (29.3)
US\$25,000–US\$50,000	68 (24.6)
US\$50,000–US\$75,000	54 (19.6)
US\$75,000–US\$100,000	39 (14.1)
>US\$100,000	34 (12.0)

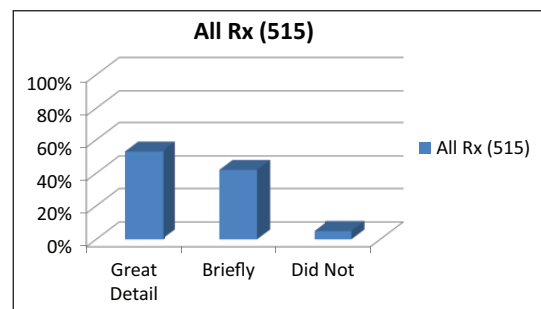


Figure 1. Discussion about allergy medication when first prescribed by physician.

with pharmacist. Finally, looking at education levels, individuals who have completed university are more likely to discuss their prescription allergy medication with a healthcare professional compared to individuals who have not completed university; physician (60% completed university vs 42% completed high school and 39% completed some

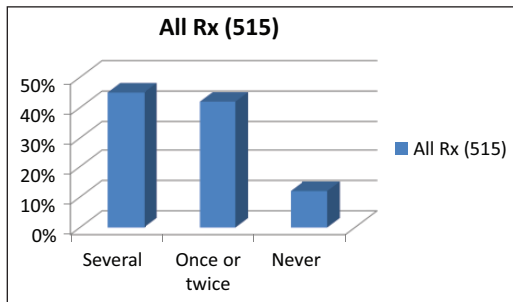


Figure 2. Subsequent discussions about allergy medication with physician.

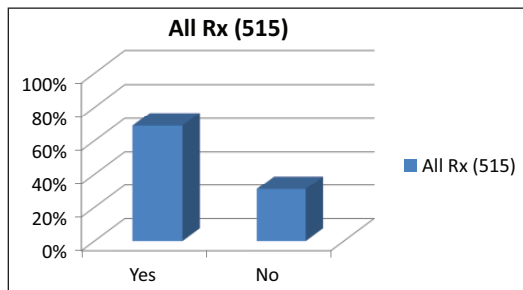


Figure 3. Discussion about allergy medication with pharmacist.

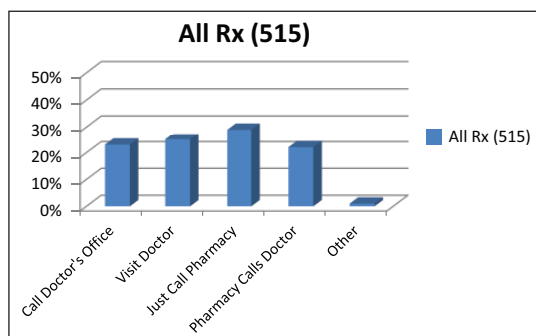


Figure 4. Prescription refills.

high school years, $p < 0.001$), pharmacist (73% vs 63% and 25%, $p < 0.001$).

Discussion

The impact of chronic conditions on the individual and society is underappreciated; particularly with an increasing prevalence of chronic disease and an increased burden of morbidity and disability from chronic diseases. The paradigm of how we manage chronic disease is shifting with a growing understanding that care and management of a chronic medical condition is a complex process, requiring coordinated action between healthcare providers and patients.¹⁶

The paradigm is further shifting with an emerging awareness of the essential role that pharmacists play in medication

therapy management, wellness counseling, disease prevention services, and primary care. Evidence supports that the development of an integrated healthcare system with the inclusion of the pharmacist as part of an interdisciplinary team can impact the quality of both individual healthcare services and a patient's healthcare plan.¹⁶

It is not surprising that improved care coordination and more effective disease management will result in better quality of care and lower healthcare utilization rates.¹⁷ However, even within an integrated system and with, or in most cases without, a care plan, consideration of patient needs and desired outcomes for their disease and quality of life are often not considered. This has led to an increase in patient self-management of chronic diseases as they weigh a number of factors (i.e. socio-economics, lifestyle, access/availability of prescription and non-prescription products) which will impact their personal health and, in some situations, the health of their family.³

Data demonstrate that enhancing self-management improves quality of life, coping skills, and symptom management, with concomitant reductions in disability, healthcare expenditures, and service utilization.¹⁸⁻²⁰ Self-management, within the confines of formal healthcare, ensures a patient is properly informed and educated about their disease with a designed course of action to ensure optimal outcomes for the patient. However, self-management may also occur outside formal healthcare with patients managing symptoms within the ecology of their chronic disease, including balancing outcomes with personal and/or family needs.^{21,22}

Self-care and self-medication outside the bounds of a designed care plan raises the issue of the responsibility of patients to ensure that the care or medication they select is appropriate to their needs, and is both safe and effective. Selecting appropriate products becomes even more challenging in an environment with more effective and increased access to medications, particularly when long-established prescription products with a good safety profiles have been rescheduled as OTC products.³

With this new environment, this survey examined how patients interact with the healthcare system to manage a chronic disease like AR. The data from this small sample suggest that a significant proportion of patients diagnosed with AR are self-managing their condition outside the bounds of a designed care plan. This finding is not that surprising in light of the perception that AR is not a significant chronic disease due to its low rate of morbidity and mortality.²³ The perception of AR is likely further impacted by the fact that some patients suffer from intermittent or episodic disease, with the disease requiring more conscientious self-management when symptoms are present.⁸

Examining healthcare provider interactions, it appears that few interactions about the patient's AR prescription occur with their physician following that first interaction where the prescription is obtained. Not unsurprisingly, it appears that goal-driven individuals (higher income and/or

higher education) more frequently speak to a healthcare professional about their AR medication(s) (prescription and non-prescription). What may be surprising is that the healthcare professional most often spoken to is the pharmacist.

The data in this study demonstrate that, of those allergy sufferers who are self-managing their disease, just over half are using a combination of prescription and non-prescription AR medications with two-thirds discussing their medication, and likely their condition, with their community pharmacist. These findings suggest that patients are prepared to self-manage AR with the assistance of their community pharmacist. However, in this instance, further research is needed to verify the findings of this study.

Thinking more broadly about self-management, pharmacists in the community setting play a key role in helping people to make informed self-care choices as they engage in their dual role when responding to patient's requests for help—as advisors and medical liaisons.²⁴ Pharmacists are increasingly being recognized as key members of the medical home/integrated healthcare system, with a key role in resolving medication-related problems, optimizing complex regimens, designing adherence programs, and recommending cost-effective therapies.^{4,16} In particular, the role of pharmacists as an essential provider of direct patient care is growing as clinical data suggest that pharmacists are being relied upon to expand, reinforce, and explain medication usage and disease treatment plans. Notably, pharmacists are often the first healthcare provider a patient speaks with about a medication-related problem. Studies have shown that pharmacists are impacting the care of chronic diseases by improving adherence to proper medication regimens, a key factor in the improvement of patient outcomes.^{25–27}

The key factor in self-managing AR, and indeed any chronic disease, is expectations from the medication. None of the medications currently used to treat AR cure the condition. Certain medications, and combinations of medications, will help to control allergy symptoms but none can eliminate the condition. Healthcare providers need to help allergy sufferers to determine the most effective treatment to alleviate their symptoms from the options available, with consideration of patient needs and preference. The pharmacists role in helping patients self-manage their conditions, particularly allergy symptoms, has become more important with formerly prescription products (mometasone furoate and fluticasone nasal sprays) having been recently approved for OTC status in the United States. Beyond choice of product patient education about their chronic disease and optimal use of the medication chosen will improve adherence to treatment and improve patient outcomes with better AR management.²⁸

Study limitations

The online survey is not based on a probability sample and therefore no estimate of theoretical sampling error can be

calculated. The self-report questionnaire (Appendix 1) identified relationships between how respondents manage their prescription and non-prescription medication, with the data then being pooled to achieve cell frequency conditions to facilitate statistical analysis. Self-report studies are reliant on participant interpretation of the question, honesty and accuracy of the responses. Social desirability bias can be an issue with self-report measures as participants may not respond truthfully, either because they cannot remember or because they wish to present themselves in a socially acceptable manner.

Conclusion

Patients with diagnosed AR appear to be self-managing their condition with few interactions with their doctor about their AR prescription. Interactions with a pharmacist about allergy medication (prescription and non-prescription) are more common than interactions with a physician in this patient sample.

Declaration of conflicting interests

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 Michael O'Dell—none
 Theodore K Kyle—Consulted for GlaxoSmithKline

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Appendix I

Questionnaire

1. Do you suffer from allergies?
 - a. Yes
 - b. No (terminate)
2. Do you treat your allergies with:
 - a. Prescription medicine (Y/N)?
 - b. Over-the-counter medicine (Y/N)?
 - c. Both prescription medicine and over-the-counter medicine (Y/N)?
 - d. Neither prescription nor over-the-counter medicine (Y/N)?

Terminate if answers are not Yes for a and/or c
3. Which prescription medication(s) do you presently use to treat your allergies?
 - a. Flonase (fluticasone)
 - b. Nasonex (mometasone furoate)
 - c. Nasacort AQ (triamcinolone acetonide)
 - d. Beconase (beclomethasone)
 - e. Omnaris (ciclesonide)
 - f. Singulair (montelukast sodium)
 - g. Veramyst (fluticasone furoate)
 - h. Clarinex (desloratadine)
 - i. Xyzal (levocetirizine dihydrochloride)
 - j. Astelin (azelastine hydrochloride)
 - k. Allegra (fexofenadine HCl)
 - l. Other
4. How long have you been using each one (number of years and months since first prescription)?
 - a. Flonase (# years & months)
 - b. Nasonex (# years & months)
 - c. Nasacort AQ (# years & months)
 - d. Beconase AQ (# years & months)
 - e. Omnaris (# years & months)
 - f. Singulair (# years & months)
 - g. Veramyst (# years & months)
 - h. Clarinex (# years & months)
 - i. Xyzal (# years & months)
 - j. Astelin (# years & months)
 - k. Allegra (# years & months)
 - l. Other (# years & months)
5. When your doctor first prescribed this medication, how much, if at all, did he discuss it with you?
 - a. Discussed it in great detail

- b. Briefly discussed it
 - c. Did not discuss it
6. Since he first prescribed it, how many times, if at all, has he discussed this medication with you?
- a. Discussed it several times
 - b. Discussed it once or twice
 - c. Never discussed it since prescribing
7. How do you get refills on the prescription?
- a. I call the doctor's office to get a refill
 - b. I visit my doctor to get a refill
 - c. I always just call the pharmacy for a refill
 - d. The pharmacy calls the doctor office to get a refill
 - e. Other (specify)
8. Have you discussed this prescription medication with a pharmacist?
- a. Yes
 - b. No
9. Which non-prescription medication(s) do you presently use to treat your allergies?
- a. Allegra
 - b. Benadryl
 - c. Claritin
 - d. Chlor-Trimeton
 - e. Dimetane
 - f. Tavist
 - g. Zyrtec
 - h. Sudafed
 - i. Other
10. How long have you been using each one (number of years and months since first prescription)?
- a. Allegra (# years & months)
 - b. Benadryl (# years & months)
 - c. Claritin (# years & months)
 - d. Chlor-Trimeton (# years & months)
 - e. Dimetane (# years & months)
 - f. Tavist (# years & months)
 - g. Zyrtec (# years & months)
 - h. Sudafed (# years & months)
 - i. Other (# years & months)
11. Have you ever discussed your use of this non-prescription medication with your doctor?
- a. Yes
 - b. No
12. Have you ever discussed your use of this non-prescription medication with a pharmacist?
- a. Yes
 - b. No
13. Please answer the following demographic questions:
- a. Age
 - b. Employment status
 - c. Annual household income
 - d. Education level
 - e. Ethnicity