

Challenges in asthma patient education

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To manage asthma, patients might need to carry out complex medication plans, initiate home environmental changes, monitor asthma symptoms, and coordinate care between different providers. The National Heart, Lung, and Blood Institute (NHLBI) guidelines recommend that clinicians teach patients these essential skills and integrate and reinforce patient education into every step of clinical care.¹ For each component, patient education is the final common pathway for patients to successfully manage their disease.

There has been great interest in developing and evaluating programs that integrate patient education into clinical care. Such programs are more likely to be successful if they are based on a theory of patient behavior change and focus on improvements beyond patient knowledge (eg, patient self-confidence and management skills).² Although patient education is not always shown to be effective in changing patient behavior or outcomes,^{3,4} in the aggregate systematic reviews suggest that patient education for asthma self-management is effective in improving objective measures of lung function, frequency of asthma symptoms, and health care utilization.^{5,6}

There have been developments in terms of the importance of patient assessment, as well as the description of specific techniques for patient education. Specific techniques have been described for efficient education in the office setting,⁷ approaches to smoking cessation,⁸ and

Abbreviation used

NHLBI: National Heart, Lung, and Blood Institute

methods to clarify patient understanding.⁹ It is important to assess the understanding and competencies of the patient or caregiver before initiating patient education. The acknowledgement of previous experiences by the clinician can help foster mutual respect that leads to effective coaching for the patient who will be managing his or her own chronic illness. The mutual participation of an informed and activated patient with a skilled clinician is synergistic.

It is crucial to emphasize that many of the recommended components of asthma care might not be effective without adequate patient education. For example, the NHLBI guidelines recommend that patients receive a written action plan that includes overall goals, doses and frequencies of medications, and actions to take in the event of an asthma exacerbation. However, the provision of these written asthma action plans without self-management education and reinforcement is unlikely to be successful in improving patient outcomes.¹⁰

The NHLBI guidelines also recommend that patients with persistent asthma symptoms be prescribed daily anti-inflammatory therapy. In a controlled trial involving 74 primary care providers and 637 of their patients, Clark et al⁷ noted that among children who were started on inhaled corticosteroids during the study period, those children treated by physicians who were trained in asthma education had significantly fewer symptoms and decreased asthma health care utilization. This finding suggests that there is a synergistic effect, and the effect of appropriate prescription of anti-inflammatory medications can be enhanced with concurrent patient education.

RESEARCH CHALLENGES AND QUESTIONS

Although the benefits and importance of asthma patient education are well documented, there are still many open questions and challenges for research in this area. For example, most patients with asthma are managed in a primary care setting. However, the ability to conduct effectiveness studies of asthma patient education in such a setting is limited by the level of provider interest, competition with clinical priorities, and issues with identifying and contacting patients.¹¹

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An appropriate intervention should theoretically improve patient knowledge, attitudes, and self-management behaviors to improve asthma outcomes.⁵ Controlled trials of such programs should measure the effect of improved patient asthma knowledge on clinical, health utilization, or cost-effectiveness outcomes. In addition to these research challenges, further questions regarding asthma patient education are discussed below.

WHO IS BEST POSITIONED TO PROVIDE PATIENT EDUCATION?

The NHLBI guidelines recommend that the principal clinician initiate asthma education and counseling and the education be provided by all members of the health care team. After the principal clinician introduces key messages, "different members of the health care team should reinforce and expand these messages during office visits and telephone calls or in more formal education sessions."¹

There are several trends that affect the feasibility of this recommendation. For chronic conditions, there is increasing appreciation for the role of allied health professionals, such as nurse practitioners and physician assistants, in managing chronic disease and the importance of collaborative approaches.¹² Second, there is an increase in the percentage of patients receiving preventive services from allied health professionals.¹³ With the increasing complexity and sophistication of clinical practice organizations, disease management programs, and managed care arrangements, a greater variety of professionals have become involved in primary care asthma education.^{14,15}

Alternatively, for some groups, such as adolescents with asthma, peer groups can be an important social influence that shapes behavior and can be used to help facilitate improved understanding and management of asthma. For nonoffice interventions, use of an asthma peer group or peer-to-peer education might facilitate asthma education for this population.¹⁶

It is not clear which of the many possible approaches to incorporate asthma education into practice is the most cost-effective and efficient in maximizing patient outcomes. Which combination of health professionals, if any, can most optimally and efficiently deliver asthma education in the clinical setting? As a further problem, there might be discordance of messages that are received from the variety of providers an asthmatic patient might see in different settings. A patient might receive a different message from his or her internist, asthma subspecialist, the nurse educator, and a physician at the local emergency department. If asthma education needs to be delivered by different health care professionals, what are the best ways to ensure that the messages from different sources are consistent?

WHAT TYPE OF TRAINING IS NECESSARY?

Recognition of the need for training in asthma education might be universal for all health professionals.

Robertson et al¹⁷ found that nurses with asthma training were more likely to assist the patient in developing self-management skills. Innovative continuing medical education programs for physicians help improve physician asthma counseling skills and self-confidence.⁷ In addition, there is a current movement to standardize competencies and certify those qualified to provide asthma education.¹⁸ Although it might be possible to translate programs developed for one group of health care professionals to others, given the different areas of expertise, background, and training of different health care disciplines, adaptations must be carefully made and evaluated.

ARE ASTHMA EDUCATION PROGRAMS COST-EFFECTIVE?

There might be economic barriers to asthma education because the implementation of education programs might require significant start-up costs, with benefits only notable in the aggregate and through long-term savings on indirect costs.⁵ Although it might not be cost-effective for individual general practices to implement formal programs, there might be long-term benefits for larger groups, such as managed care organizations or community coalitions, or society at large to implement asthma education programs. Furthermore, instead of individual asthma education, the use of group sessions for asthma education might also be a cost-effective alternative.¹⁹ New approaches and future evaluations of asthma patient education will need to include cost-effectiveness analysis.

WHAT ARE THE MOST EFFECTIVE METHODS TO USE NEW TECHNOLOGIES?

Given the cost issues described above, the Internet offers new, inexpensive, and rapid methods to provide and enhance patient asthma education. Unlike traditional patient handouts, the Internet offers user interactivity and engagement, which should enhance user learning and understanding. However, although patient education Web sites are widespread, a comprehensive survey of such Web sites for asthma by Croft and Peterson²⁰ noted that such information is "highly variable in quality and content, and makes little innovative use of technology." The Health Information Technology Institute and the Health on the Net Foundation offer criteria that health care providers can use to evaluate the quality of patient asthma education Web sites.²¹

Interactive multimedia educational software programs, delivered over the Internet or by CD-ROM, can also be used for patient asthma education. Such programs can be customized to fit the learners' needs, as well as allow communication with the health care team. In addition, programs that are based on underlying behavioral theory are more likely to demonstrate success. Some controlled trials suggest that interactive multimedia education can improve asthma knowledge, decrease symptom days, and

reduce emergency department visits.^{22,23} However, it is not clear whether these findings are generalizable to other populations. In addition, adoption of the Internet as a health information resource continues to lag among vulnerable populations who could benefit the most, including patients of lower socioeconomic status and the elderly.²⁴

Finally, electronic medical records have been shown to reduce medical errors, improve use of treatment guidelines, and reduce redundant testing and are now emerging as a potential platform for the delivery of both physician and patient education at the point of care.²⁵ How best to integrate the patient education and leverage this health information technology remains to be seen.

HOW CAN PATIENT EDUCATION BE MORE CULTURALLY COMPETENT?

A patient's own cultural interpretations of health and illness can affect his or her likelihood to accept or reject asthma educational messages. Differences in beliefs about asthma (eg, medicinal use of foods and botanicals and hot-cold theories of health and disease) among different ethnic groups have been described.²⁶ Cultural competency is the provider's ability to work effectively in situations in which the language, customs, beliefs, or values of the provider differ from those of the patient. An awareness of these different beliefs among ethnic groups, along with an awareness that diversity also exists within ethnic groups, can improve communication.

Obvious barriers to education, such as language differences, can be addressed by the provision of educational resources in different languages or the availability of interpreters. Additional cultural competency techniques have been described (eg, use of community health workers, coordinating with traditional healers, and administrative accommodations).²⁷ Theoretically, the use of such techniques should improve asthma education and patient outcomes; however, descriptions of how to systematically incorporate such techniques into patient care or evidence about their effectiveness are needed.

CONCLUSIONS

In summary, patient education is a critical requirement for patients to successfully manage their disease. The NHLBI guidelines highlight the importance of education in building a partnership for disease management. Despite rigorous studies that have documented the importance of patient education and communication in all components of asthma care, further work on how to efficiently and cost-effectively incorporate education into practice, how to use new technologies, and how to offer such education in a culturally competent manner remain.

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