Health Literacy Influences Self-Management Behavior in Asthma

To the Editor:

The interesting study by Patel et al¹ in an issue of *CHEST* (November 2012) demonstrated that asthma self-management strategies, patient-physician communication, and patient satisfaction were lower among female individuals who did not have an asthma action plan. Therefore, Patel et al¹ concluded that the use of asthma action plans may enhance clinical-patient relationships and self-management efforts in patients with asthma. Of note, the authors did not measure the participants' health literacy status in their analysis. In their study, Patel et al¹ did measure educational attainment; however, Williams et al² showed that years of schooling do not necessarily predict reading ability. Furthermore, studies indicate that lower health literacy is associated with lower satisfaction with asthma status, a lower likelihood of participation in asthma management, and poor metered dose inhaler skills.^{2,3} Studies also suggest that low health literacy may serve as a potential mediator of poor patient-physician communication.^{4,5} Given this possible limitation, future studies should consider measuring health literacy status when ascertaining self-management behavior and patient-physician communication when dealing with chronic illnesses such as asthma.

Sujeev S. Bains, MD
Sonia N. Bains, MD
Charleston, SC

Affiliations: From the Department of Internal Medicine (Dr S. S. Bains), and the Department of Pulmonary, Critical Care Medicine, Allergy and Sleep Medicine (Dr S. N. Bains), Medical University of South Carolina.

Financial/nonfinancial disclosures: The authors have reported to *CHEST* that no potential conflicts of interest exist with any companies/organizations whose products or services may be discussed in this article.

Correspondence to: Sujeev S. Bains, MD, Medical University of South Carolina, 135 Rutledge Ave, Charleston, SC 29425; e-mail: ssbains@aol.com

© 2012 American College of Chest Physicians. Reproduction of this article is prohibited without written permission from the American College of Chest Physicians. See online for more details.
DOI: 10.1378/chest.12-0578

REFERENCES

1. Patel MR, Valerio MA, Sanders G, Thomas LJ, Clark NM. Asthma action plans and patient satisfaction among women with asthma. *Chest*. 2012;142(5):1143-1149.
2. Williams MV, Baker DW, Honig EG, Lee TM, Nowlan A. Inadequate literacy is a barrier to asthma knowledge and self-care. *Chest*. 1998;114(4):1008-1015.

3. Mancuso CA, Rincon M. Asthma patients' assessments of health care and medical decision making: the role of health literacy. *J Asthma*. 2006;43(1):41-44.
4. Sudore RL, Landefeld CS, Pérez-Stable EJ, Bibbins-Domingo K, Williams BA, Schillinger D. Unraveling the relationship between literacy, language proficiency, and patient-physician communication. *Patient Educ Couns*. 2009;75(3):398-402.
5. Kripalani S, Jacobson TA, Mugalla IC, Cawthon CR, Niesner KJ, Vaccarino V. Health literacy and the quality of physician-patient communication during hospitalization. *J Hosp Med*. 2010;5(5):269-275.

Response

To the Editor:

Drs S. S. Bains and S. N. Bains point out that health literacy status is an important factor to consider when ascertaining self-management behavior and patient-physician communication among those with chronic illnesses. Although in our study¹ in *CHEST* we could not measure health literacy when examining relationships among asthma action plans, self-management behaviors, and satisfaction, we agree that adequate health literacy is an important factor in health behavior.^{2,3} To date, measures of health literacy are limited in their ability to capture the full array of skills necessary for effective self-management behavior and patient-provider communication.^{4,5} The Institute of Medicine has highlighted the need for more comprehensive assessments that include reading, writing, speaking, listening, and numeracy.⁴ Better tools with strong psychometric properties are certainly needed. Health literacy is an important area that deserves further study to understand the range of factors that promote or impede self-management and patient-provider relationships.

Minal R. Patel, MPH
Melissa A. Valerio, PhD
Georgiana Sanders, MD
Lara J. Thomas, MPH
Noreen M. Clark, PhD
Ann Arbor, MI

Affiliations: From the Center for Managing Chronic Disease (Drs Valerio, Sanders, and Clark and Mss Patel and Thomas), the Department of Health Behavior and Health Education (Ms Patel and Drs Valerio and Clark), University of Michigan School of Public Health; and the Division of Allergy and Clinical Immunology (Dr Sanders), Department of Internal Medicine, University of Michigan.

Financial/nonfinancial disclosures: The authors have reported to *CHEST* that no potential conflicts of interest exist with any companies/organizations whose products or services may be discussed in this article.

Funding/Support: This work was supported by the National Institutes of Health [Grant 1 R18 HL60884-01].

Correspondence to: Noreen M. Clark, PhD, Center for Managing Chronic Disease, University of Michigan, 1415 Washington Heights, Ann Arbor, MI 48109-2029; e-mail: nmclark@umich.edu
© 2012 American College of Chest Physicians. Reproduction of this article is prohibited without written permission from the American College of Chest Physicians. See online for more details.
DOI: 10.1378/chest.12-2292

ACKNOWLEDGMENTS

Role of sponsors: The sponsor had no role in the design of the study, the collection and analysis of the data, or in the preparation of the manuscript.

REFERENCES

1. Patel MR, Valerio MA, Sanders G, Thomas LJ, Clark NM. Asthma action plans and patient satisfaction among women with asthma. *Chest*. 2012;142(5):1143-1149.
2. Williams MV, Baker DW, Honig EG, Lee TM, Nowlan A. Inadequate literacy is a barrier to asthma knowledge and self-care. *Chest*. 1998;114(4):1008-1015.
3. Mancuso CA, Rincon M. Asthma patients' assessments of health care and medical decision making: the role of health literacy. *J Asthma*. 2006;43(1):41-44.
4. Institute of Medicine. *Health Literacy: a Prescription to End Confusion*. Washington, DC: The National Academies Press; 2004.
5. Berkman ND, DeWalt DA, Pignone MP, et al. *Literacy and Health Outcomes, Evidence Report/Technology Assessment No. 87*. Rockville, MD: Agency for Healthcare Research and Quality; 2004. AHRQ Publication No. 04-E007-2.

Relevance of Serial Interferon- γ Release Assays in Health-care Workers

To the Editor:

We read with interest the study by Park et al¹ (see page 1461) in which they nicely evaluated serial interferon- γ (IFN- γ)-release assays (IGRAs) in the diagnosis of *Mycobacterium tuberculosis* (MTB) infection in health-care workers. Health-care workers, although at high risk for MTB infection, are generally less likely to develop active or severe TB. Considering unexplained fluctuations in IFN- γ levels, along with the high risk of conversions due to false positives in serial assays,² conducting monthly IGRAs in health-care workers may give varied values that may not be of clinical use. Rather, it would be useful for the readers if the authors could provide follow-up data on the proportion of patients who received a diagnosis of MTB (IGRA-positive) who actually progressed to active TB. Retrospective evaluation of serial IFN- γ levels of such patients could provide a strong basis for formulating guidelines, incorporating their role in the management of latent and active TB.

It has been shown that circulating IFN- γ levels decrease with isoniazid and rifampicin chemoprophylaxis.³ However, the reasons for reversion of IGRAs in a subset of patients in the study was not discussed. It would be helpful if the authors could discuss the causes of such individual variations in IFN- γ response, as well as differentiate nonspecific variations from those associated with new or resolving infection.

Deepak Aggarwal, MD
Chandigarh, India

Phiza Aggarwal, MD
Mullana, Ambala, India
Prasanta Raghav Mohapatra, MD, FCCP
Chandigarh, India

Affiliations: From the Department of Pulmonary Medicine (Drs D. Aggarwal and Mohapatra), Government Medical College & Hospital; and Maharishi Markandeshwar Institute of Medical Sciences and Research (Dr P. Aggarwal).

Financial/nonfinancial disclosures: The authors have reported to *CHEST* that no potential conflicts of interest exist with any companies/organizations whose products or services may be discussed in this article.

Correspondence to: Deepak Aggarwal, MD, Department of Pulmonary Medicine, Block-D, Level-5, Government Medical College & Hospital, Sec-32, Chandigarh Pin-160030, India; e-mail: drdeepak@hotmail.com

© 2012 American College of Chest Physicians. Reproduction of this article is prohibited without written permission from the American College of Chest Physicians. See online for more details.

DOI: 10.1378/chest.12-1254

REFERENCES

1. Park JS, Lee JS, Kim MY, et al. Monthly follow-ups of interferon- γ release assays among health-care workers in contact with patients with TB. *Chest*. 2012;142(6):1461-1468.
2. Mazurek GH, Jereb J, Vernon A, LoBue P, Goldberg S, Castro K; IGRA Expert Committee; Centers for Disease Control and Prevention (CDC). Updated guidelines for using Interferon Gamma Release Assays to detect *Mycobacterium tuberculosis* infection—United States, 2010. *MMWR Recomm Rep*. 2010;59(RR-5):1-25.
3. Lee SW, Lee SH, Yim JJ. Serial interferon-gamma release assays after chemoprophylaxis in a tuberculosis outbreak cohort. *Infection*. 2012;40(4):431-435.

Response

To the Editor:

We thank Dr Aggarwal and colleagues for their interest in and valuable comments on two of our publications.^{1,2} Their first comment addressed the article on the high rates of conversion and reversion in monthly interferon- γ release assay (IGRA) results for health-care workers.¹ They asked whether any participant with a positive IGRA subsequently developed active TB, which is an important issue. So far, none of the participants has developed active TB. We plan to screen participants for active TB at 1, 2, and 5 years. Their second comment addressed another article describing the change in IGRA results among participants taking medication to treat latent TB infection.² They asked what is meant by negative conversion of the IGRA with treatment of latent TB infection. Unfortunately, the clinical meaning of such conversions is not clear, and long-term follow-up is required to answer the question.

Jong Sun Park, MD
Sei-Won Lee, MD
Jae-Joon Yim, MD
Seoul, South Korea

Affiliations: From the Division of Pulmonary and Critical Care Medicine (Dr Park), Department of Internal Medicine, Seoul National University Bundang Hospital; Department of Pulmonary and Critical Care Medicine (Dr Lee), Asan Medical Center,