

## Consumer Health Care Information on the Internet: Does the Public Benefit?

A substantial amount of health-related information is widely available on the Internet.<sup>1</sup> It has become common for patients to refer to these sources before and after seeking medical attention. In this issue of *RESPIRATORY CARE*, Walsh and Volsko present findings from their study to determine the readability characteristics of consumer health-care information available on the Internet.<sup>2</sup> Although millions use the Internet for health-care information, Walsh and Volsko hypothesized that these materials exceeded the average reading level of Americans, which limits their comprehension and any potential advantages of these resources. The purpose of their study was to determine the readability of Internet-based consumer health-care information offered by the 5 organizations concerned with the top 5 medical-related causes of deaths in the United States at the time of their study: heart disease, cancer, stroke, chronic obstructive pulmonary disease, and diabetes.<sup>3</sup> Since Walsh and Volsko collected their data, Alzheimer disease passed diabetes as a leading cause of death in the United States, and the death rates of 8 of the top 10 leading causes of death in the United States all dropped substantially in 2006, including a very sharp drop in mortality from influenza and pneumonia.<sup>4</sup> Although these decreases in mortality are encouraging, health-care providers must consider the various factors, such as reading level, that affect patients' understanding of their health care.

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According to the United States Department of Health and Human Services (USDHHS), Americans on average read at the 7th-grade level, and most people read 3 grade levels below their attained academic level.<sup>5,6</sup> Consequently, the USDHHS resolved that anything written above a 9th-grade level is "difficult" and considerably higher than the proficiency level of many Americans.<sup>4</sup> Material is only considered "easy to read" if it is below a 6th-grade level, and material between the 7th and 9th grade level is considered "average difficulty." Therefore, health-care literature for the general public should be written at or below the 6th-grade level.<sup>7</sup>

Illiteracy is not a problem limited to patients for whom English is a second language. Traditional patient education

relies heavily on printed written materials, which are often written at a level too complex for low-literacy patients.

Medical terminology is complex and unique, which further compounds the readability problem of health-related materials. The term "health literacy" is described by the Joint Commission (formerly the Joint Commission on Accreditation of Healthcare Organizations) as "the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions."<sup>8</sup> Nationally, almost one quarter of the adult population cannot read and understand very basic written materials. Health-care instructions range from taking a pill with a meal to properly using an inhaler. Studies have shown that people with low health literacy are not limited to minorities or underprivileged populations; rather, low health literacy affects people of all ages, races, incomes, and education levels.<sup>8,9</sup> Age is the strongest predictor of literacy skills and therefore of health status, and the over-65 age group has the lowest reading level.<sup>5</sup> Therefore, geriatric patients are in the most need of simple reading materials regarding their health and health care.

Health literacy takes into account not only reading level but also cultural differences that affect understanding, such as language, customs, and complementary care experiences. All of these factors taken together form a compelling reason why health-care providers should offer health-related materials at the lowest possible reading level, whether on the Internet or in print.

The results from Walsh and Volsko indicate that the consumer health-care materials on the official Web sites of the American Heart Association, American Cancer Society, American Lung Association, American Stroke Association, and American Diabetes Association exceed the reading level recommended by the USDHHS and the Joint Commission.<sup>2</sup> Only 4 of the 100 articles that Walsh and Volsko randomly selected were written at the appropriate "easy" level, and the average reading level was "very difficult" (grade level 9.85–16.05, ie, 10th grade through the 4th year of college). Articles posted on the American Lung Association Web site had the lowest reading levels, but were also significantly more difficult to read than is recommended by USDHHS and the Joint Commission. Consequently, it is highly questionable whether or not these

resources contribute to consumer understanding. Furthermore, reading those resources and not understanding them may create even more difficulties in seeking preventive health care, knowing the connection between risky behaviors and health, managing chronic health conditions, and following directions on medicine.<sup>10</sup>

Walsh and Volsko's study<sup>2</sup> is an important contribution to the respiratory care literature in that it points to a large problem that must be adequately addressed to improve health-care outcomes, including adherence, safety, costs, and other indicators of health. For example, recent studies showed the relationship between health literacy and asthma health-care outcomes. One study found that less health literacy was associated with poor longitudinal asthma outcomes, including worse quality of life, worse physical function, and more emergency department utilization for asthma, particularly when there was low patient knowledge of asthma and self-management.<sup>11</sup> Lower literacy is also associated with less satisfaction with asthma status and worse assessment of quality of care received.<sup>12</sup> Patients with lower literacy are more likely not to want to participate in decisions about their asthma care,<sup>12</sup> and low parental literacy is associated with worse asthma care measures in children.<sup>13</sup> Consequently, respiratory therapists, nurses, pharmacists, and physicians should teach and reinforce asthma self-management education at every opportunity and in all settings, as recommended by the 2007 asthma guidelines from the National Asthma Education and Prevention Program.<sup>14,15</sup>

The study by Walsh and Volsko<sup>2</sup> does not assess the health-care consequences of patients accessing health-care materials that exceed their reading level and, most likely, their comprehension. However, their discussion refers to the potential effects on health-care outcomes; they cite other studies beyond the examples already provided. Additional studies are needed to determine the effects of providing low-reading-level health-care information on consumer comprehension and health-care outcomes. Efforts to improve health-care outcomes should focus on improving health literacy so patients learn, understand, and implement effective self-management.

Based on Walsh and Volsko's findings it is doubtful that the average American can understand the readily available health-care information posted on the Internet. In my opinion, these resources probably add to the confusion and mismanagement of health care, doing more harm than good. Providers need to recognize the limitations of written in-

structions and care plans. I encourage RESPIRATORY CARE readers to become familiar with reading-level-assessment tools to help assess and provide meaningful education, follow-up instructions, and teaching materials to patients and their families.

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The author reports no conflicts of interest related to the content of this editorial

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