Radiation oncology articles not easily readable for most Americans

Many Americans turn to the Internet for medical information. In fact, over 80% of Internet users seek information online regarding their health, which demonstrates how often the Internet is used to research diseases, medical treatments, and other health information. Many have stated that online healthcare information may have influenced medical decision-making. But all of this information online is only useful if patients from all walks of life can understand them.

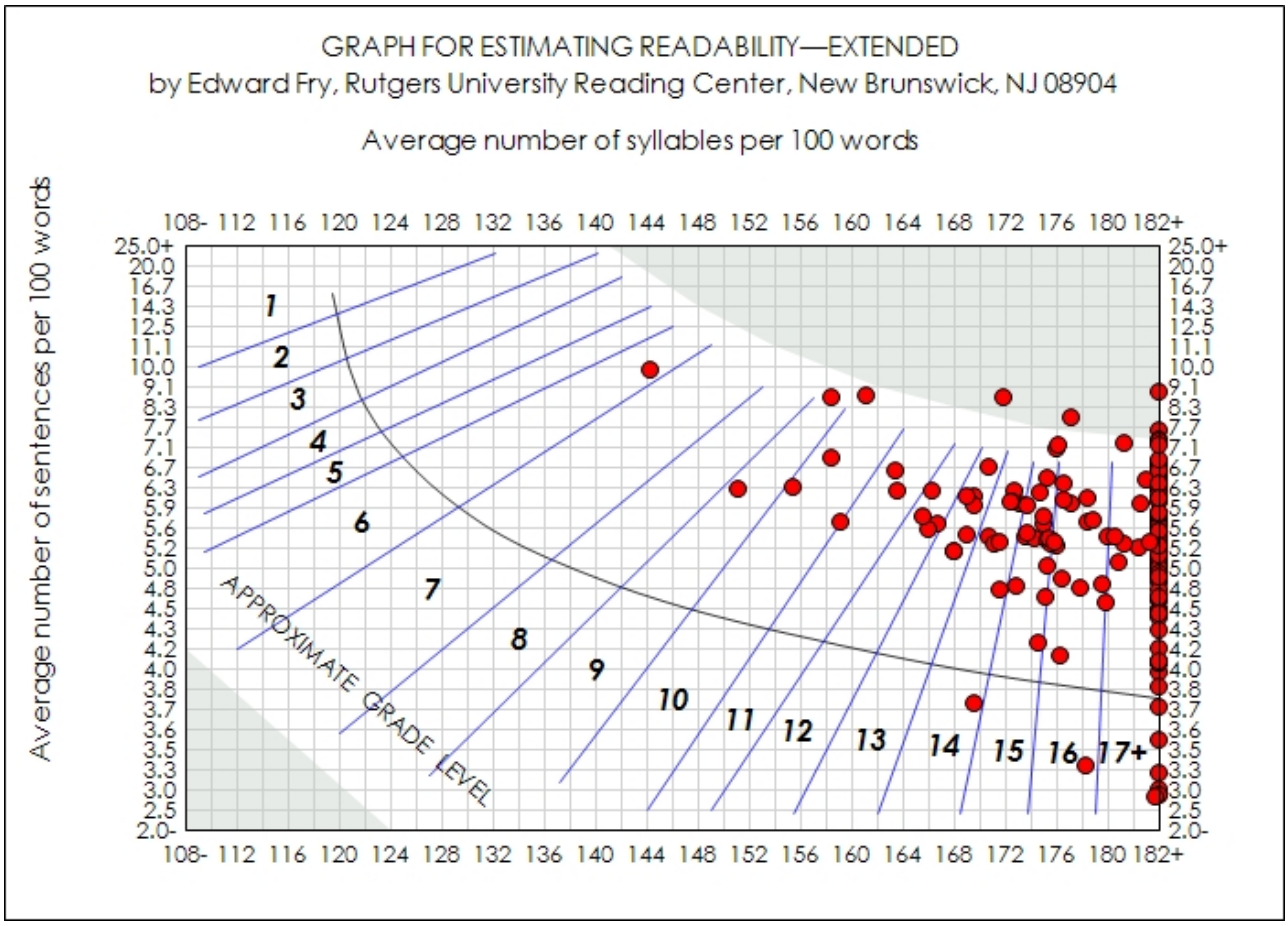

Fig. 1. The Fry Graph, a visual display of reading levels for each article (Reproduced with permission from Elsevier).

This idea falls under the field of health literacy, which is a patient's ability to read and understand healthcare information in order to make effective healthcare decisions. One component of health literacy is *readability*, which quantitatively studies how easily text can be read and understood. Readability plays an important role in the medical field of Radiation Oncology (RO) due to the

specialized nature of the field and its complex treatment plans and emerging technologies.

Because the typical American reads at a 7th to 8th grade level, the National Institutes of Health and American Medical Association developed guidelines that recommend that patient education materials be written between a 3rd to 7th grade level. The purpose of our study was to determine the readability level of online patient education resources from RO professional societies' websites and from other RO-affiliated websites. This was the first comprehensive readability study of publicly accessible online RO information using multiple assessment techniques.

In our study, we downloaded 35 patient education articles from 5 major RO professional websites. We obtained 100 additional articles by searching for 10 key RO phrases using Google and downloading the first 10 articles written for patients for each term. All 135 articles were evaluated with 10 readability scales that are widely accepted in the health literacy literature.

When taking all the assessment tools into consideration, we found that the 135 articles were written at a 13.7 grade level with a standard deviation of 2.0. More than 80% of the articles required a high school diploma to understand (Fig. 1), and only 1 of the 135 articles (0.74%) was written at the nationally recommended reading levels.

These results suggest that RO websites have patient education articles that are written at high reading levels, and patients may not be able to fully understand them. Future work toward rewriting RO patient education resources would benefit Americans by helping to increase their understanding of their health and treatment options related to RO.

Arpan V. Prabhu, David R. Hansberry, Nitin Agarwal, David A. Clump II, Dwight E. Heron
University of Pittsburgh Hillman Cancer Institute, Pittsburgh, Pennsylvania, USA

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