

CE Course: Lines and Circles: The Readability of Patient Reading Materials

By: By Toni S. Adams, RDH, MA, FAADH

“What’s clear to you is clear to you.”

Toni Cordell-Seiple, adult literacy activist

Learning Objectives

Upon completion of this course, dental professionals will:

- Understand the impact of low literacy and low health literacy in dentistry
- Appreciate the need for readable literature and forms for dental patients
- Know how to identify and/or create readable literature and forms

Toni Cordell-Seiple became an adult literacy activist later in life, but at age 30 or 31 she had a secret. She read poorly and slowly. She also had a health problem that the gynecologist said could be fixed. Great! The hospital paperwork appeared to her as “lines and circles over sheets and sheets and sheets.”¹ She was too embarrassed to reveal her secret, so dutifully signed wherever asked and was admitted for her procedure. A few weeks later at the follow up appointment the nurse asked, “How are you feeling after your hysterectomy?” As Ms. Cordell-Seiple described it, “I acted as normal as I could, but inside my mouth fell open. How could I let anyone take a part of my body, and not know anything about it?”¹

USA Literacy

Approximately half of United States residents attempt to function with limited literacy, which is more than just the ability to read and write. Low literate people read and write poorly and slowly, have trouble understanding and using math (numeracy), and find it difficult to speak and make themselves understood and to follow and remember oral communication, though some can be highly articulate when

speaking. One in five is “functionally illiterate,” meaning that they are severely limited in their ability to participate in a society where literate ability is assumed.² It is not surprising that literacy level impacts health, but to a greater degree than most might imagine. A report published in Australia was based mostly on research completed in the USA; it concluded:

Low health literacy is a statistically independent risk factor for poor health. From an epidemiological perspective the *risk of increased mortality stemming from limited health literacy is nearly the same as the impact of chronic disease* – even after controlling for age, race, gender, income, education, health status, health behaviours (sic), health access and psychological status.”³ (italics added)

International Literacy

Low literacy is an international problem among other developed countries as well. The Organisation for Economic Co-operation and Development (OECD) studied international adult literacy through its Program for the International Assessment of Adult Competencies (PIAAC). This newer research looked at young, unemployed, and older adults in the US and 23 other developed countries in the areas of reading, writing, numeracy, and the “problem solving in technology-rich environments,”⁴ or the ability

“What I feel, in my case, if there could be a person that could talk like us, and be kinder, and to ask us if we can read, or offer to fill it out, and with a smile, so we feel the person supports us. But if we see their hard faces, how could we ask for help to fill out the form?”¹¹

to use digital technologies. U.S. adults underperformed the international averages in numeracy and technological problem-solving and achieved only slightly better than the international average in literacy.⁴

Health Literacy and Oral Health Literacy

A person's level of literacy generally correlates with his level of health literacy, or his ability to find, understand, evaluate, and use health information.⁵ According to a report from the United States Department of Education, only about 12% of English-speaking adults in the USA understand health.² Health literacy has been called "the sixth vital sign"⁶ and a necessary "currency"⁷ for negotiating the technical language and complex systems of modern healthcare.

Oral health literacy applies the concept to the oral environment and is the topic of an increasing number of published peer-reviewed research articles. Oral health literacy has been called an "unrecognized patient risk factor"⁸ and "the invisible barrier" to achieving oral health.⁹ Though the exact relationship between oral health literacy and oral health is still not known, it seems logical to conclude that they correlate just as health literacy relates to general health.

Our job is to help patients achieve optimum oral health. We ask them to complete a variety of forms and attempt to educate them on numerous topics. These efforts pose a continual challenge as health and oral health grow more complex and as our time with people shrinks. We supplement our chair side education with printed materials that people can take home.¹⁰ Unfortunately, due to deficits in literacy and health literacy, about half of our patients cannot read a lot of the literature and forms that we dispense or ask them to complete.^{2,11} We must ask ourselves, "If a patient signs a consent form that they cannot read, is that consent really *informed*?"

Rudd and colleagues surveyed the peer-reviewed health literacy research from a 25-year period. Over 800 studies in public health, medicine, and oral health concluded that, as of 2007, most health education literature was unreadable for the average high school graduate.⁵ Newer research confirms that the problem continues.¹² Additionally, the forms that patients need to complete and sign can act as barriers to patients receiving care. "In light of findings related to

medical errors as well as to outcomes related to limited reading abilities, the health field can no longer tolerate casually and carelessly written materials and documents."⁵ To complicate the problem, low literate people tend to be less assertive in letting us know that they don't understand or in asking questions.¹³ Most are embarrassed by their low literacy and do not reveal their limitations, so it is difficult to identify and help them.¹⁴

"They gave me some medicine that wasn't for me. I took it, all night I couldn't sleep. I felt bad, my head hurt for about 3 days. . . . It was for asthma and I took it because I felt sick to my stomach. It felt like inflammation in my stomach. And I almost died, I tell you, because I didn't know how to read."¹¹

One way that dental professionals can help is to assure that office forms and patient education handouts are readable for people in the lower reading levels. This article is an overview of *readability*, or the extent to which a document is understandable to a given person. Readability is an issue with all of the reading that we ask people to do, including histories and other forms, practice websites, online resources, signs, appointment reminders, directions, and patient informational and educational materials. Do not randomly select literature or forms because they are free or easily available. It is pointless to dispense materials that are not helpful.¹⁵ Use these guidelines to evaluate the printed materials that you have on hand and those that you consider creating and acquiring.

As you evaluate or search, keep your goals and your audience in mind. What do you want a brochure to do, and who will use it? People of all reading levels appreciate writing that is brief, simple, and clear, so easy-to-read materials are suitable for everyone, including advanced readers.¹³ Assess three main features of a document: the content, the writing style, and the layout.^{13, 16}

Content-What is the message?

What ideas are addressed? A handout should cover only a few main points and omit nice-to-know but unneeded

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technical background information, which makes the reading more difficult and adds length.¹⁶ A document that is too complex can daunt any reader, but is especially intimidating to low literate people.

The content should be clear, direct, simple, and relevant to your intended readers. Information is easier to understand and recall when it is presented in a logical sequence such as question-answer, problem-solution, known to unknown, or chronological progression of events or facts.¹³

The text should focus on the new information or skill that you want the person to acquire and emphasize **why** it is important. People always want to know, “What’s in it for me?” Information about how to develop new skills

can be easier to follow when presented as steps.¹⁶ Also, look for literature that includes a publication date and at least a few reliable references so that you know it is accurate and current.¹³

“If you have a reading problem and you go to a doctor, that can be very scary, it’s like a nightmare. You walk in that office and you realize, first thing you have to do is fill out a form. Your heart beat real fast. You’re scared, you don’t know what to do, you want to walk out. I have. I would get mad about something and blame them, that this is not the right place for me, you’re not respecting me, and walk out. And it had nothing to do with that. It was just I need to cover that I couldn’t read this. I didn’t want them to know that I’m walking out ‘cause I couldn’t read.”¹¹

Free or Inexpensive Readability Software

- Health Literacy Advisor™ from Health Literacy Innovations™ (add to MS Word) at <https://www.healthliteracyinnovations.com/products/hla.php>
- Readable.IO, a collection of tools, will test a block of text for FREE or a very low cost, and also identify adverbs, clichés, and passive voice at <https://readable.io>
- ReadabilityStudio from OleanderSoftware (works with Windows) at <http://oleandersolutions.com/readabilitystudio.html>
- Readability Formulas offers seven formulas to choose from as well as a variety of other information about writing and readability, for FREE at <http://www.readabilityformulas.com>
- StyleWriter4 from StyleWriter-USA.com is downloadable software for free or low cost and works with Windows & Macs, at <http://www.stylewriter-usa.com>
- WebageFX will test the readability of a web page or a given selection of text for FREE. Just insert a URL or a block of text at <https://www.webpagefx.com/tools/read-able/>

Writing-How is the message communicated?

The writing style makes the content easy to understand. Sentences and paragraphs should generally be short, simple, and direct. Look for literature that is written in a conversational style and that uses an active voice and common words rather than a lot of technical jargon.^{13, 17, 18} Instead of “Toothbrushing is recommended daily,” say, “Brush your teeth every day.” When unusual technical terms must be used, they are clearly defined and illustrated.¹⁷ Some technical terms, such as *cholesterol* or *nutrition*, are well known so may not need defining.¹³ (Bar 4 on page 20 for examples of word substitutions.)

Select documents that are written at a fifth-to-sixth grade level.⁷ Consult the seven formulas at readabilityformulas.com. Most formulas on this free site determine reading level by calculating the proportion of words with three or more syllables. However, they will not rate the content, sentence structure, or layout, so use them in conjunction with the rest of your evaluation.^{16, 19} (See Side Bar 1, Readability Software.)

Layout-What does the document look like?

A well laid-out document is more inviting and easier to read. An ideal layout is created by strategic use and placement of the

Readability Resources

- A Way With Words: Guidelines for Writing Oral Health Materials for Audiences with Limited Literacy; excellent brief brochure from the National Maternal and Child Oral Health Resource Center at Georgetown University at <https://www.mchoralhealth.org/PDFs/AWayWithWords.pdf>
- Health Literacy Universal Precautions Toolkit (2nd Edition) from the Agency for Healthcare Research and Quality at https://www.ahrq.gov/sites/default/files/publications/files/healthlittoolkit2_4.pdf
- Simply Put, a guide to creating easy-to-understand materials from the Centers for Disease Control at https://www.cdc.gov/healthliteracy/pdf/simply_put.pdf

elements such as text, fonts, paragraphs, columns, graphics, tables, and colors.¹⁶

The easiest to read documents leave about one-third of the paper empty. White space highlights and defines the elements and should appear around the outer borders, between columns and paragraphs, and around pictures and tables.¹⁶

The text should have some breathing room. Look for 12-14-point serif fonts. Larger or smaller fonts can make the text more difficult to read. Serifs are the little extra flourishes such as on Times New Roman and Cambria fonts. Simpler sans-serif fonts without the extra flourishes, such as Calibri and Arial, work better as headings. Documents should use no more than two or three different fonts and avoid all capital letters. All-caps are more difficult to read because the eye depends on the variations in lower-case letters to follow the text.¹⁶

Sentences and paragraphs should be brief and direct. Paragraphs should be justified to the left margin, not centered or right justified. Text on wider pages should be divided into columns.¹⁶

Simple but descriptive headings and subheadings can help the reader navigate the document and stand out when they are in bold and larger than the majority of the text.¹³ Lists are read more easily when they are presented as bullet points rather than in a paragraph style,^{7,18} should be no more than about five items long, and should flow from one point to the next in a logical sequence.¹⁶

Graphics and pictures can add appeal but must be meaningful, clearly and simply labeled, and placed near the text that they illustrate.¹⁷ Color can make a document more attractive, but only if there are not too many colors. Backgrounds should be white or a light color, and colored text should contrast enough with the backgrounds to make reading easy.¹⁶

Et cetera - What else should you know?

Few documents meet all of these guidelines, so look for those that come the closest.

Spoken and written information should complement each other, so always add an oral explanation, a demonstration if appropriate,¹¹ and perhaps some personalized notes on a handout. Follow up at the next appointment by asking people about the clarity and helpfulness of the materials.¹⁵

Maintain an assortment of materials that are brief and comprehensive, cover a variety of topics, and are suitable for different audiences. These can be hard copies or easily printed electronic versions. Then, dispense only a few handouts at once. Too much literature can be just as overwhelming as poorly written literature.

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Plain Language Resources

- Online Thesaurus from Clear Language and Design at <http://clad.tcclcd.org/wp-content/uploads/2014/12/CLAD-Thesaurus.pdf>
- Plain Language Materials and Resources, a variety of helpful tools to create readable materials at <https://www.cdc.gov/healthliteracy/developmaterials/plainlanguage.html>
- PlainLanguage.gov offers multiple Plain Language tools at <https://www.plainlanguage.gov/resources/checklists/>
- Plain Language training for FREE from the National Institutes of Health at <https://www.nih.gov/institutes-nih/nih-office-director/office-communications-public-liaison/clear-communication/plain-language/plain-language-getting-started-or-brushing>

Suggested Word Substitutions

Healthcare Word	Suggested Substitution(s)
Abrasion	Worn away
Abscess	Ulcer, blister
Acute	Sudden, short term
Administer	Give, take
Alleviate	Ease, soften
Annually	Each year, once a year
Anterior teeth	Front teeth
Antibiotic	Drug that fights germs
Benign	Growth/lump that is not cancer
Chronic	Long term, long lasting
Congenital	Born with, inherited
Crown	Cap that covers a tooth, protective covering of a tooth
Disclose	Share, tell
Discontinue	Stop
Edema	Swelling
Gingivitis	Swelling/soreness of the gums, unhealthy gums, bleeding gums
Hyperglycemia	Too much sugar in the blood
Hypertension	High blood pressure
Hypoglycemia	Too little sugar in the blood
Infection	Disease or sickness usually caused by germs
Malignant	Growth/lump that is cancer
Medication	Medicine, pills
Microorganism	Germ
Osteoporosis	Thin fragile bone
Periodontal disease	Gum disease
Posterior teeth	Back teeth
Radiation, radiograph	X-Ray, picture of bones
Systemic	In all parts of the body
Topical	Applied to the skin/gums
Tumor	Growth, lump
Virulent	Strong, dangerous

Designate one person in the office to evaluate and select patient written materials.²⁰ That person can complete the free plain language training offered by the National Institutes of Health (See Side Bar 3). This training is about how to write materials but can also be used to evaluate existing materials. The appointed person might also train staff members how to help,²¹ and/or consult some patients of different reading levels to get their impressions.^{13, 15} Ask, “Can you help me?” give several options to compare, and perhaps ask them to apply some of the tests in Side Bar 1, Readability Software.

“All these problems, not knowing how to read, it feels like being blind, ignorant, not able to understand, to explain or to ask people. If there are many people around, I feel embarrassed to tell the doctor I cannot understand. I feel really bad, that I am not worth anything, that there is no reason for me to be in this world, that I came into this world only to suffer.”²¹

Conclusion

Health professionals should regularly review the readability of their forms and patient education materials as well as the availability of help from staff members to understand and complete the forms. Documents should be current, clear, simple, brief, relevant, and readable by people in a variety of reading levels. Re-read the materials occasionally. Are they up-to-date? Do they still meet your goals? Patients still may not read every word of every document that you give them, but you will have done your best to assure the quality and readability of each.

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About the Author

Toni S. Adams, RDH, MA has won awards for writing, speaking, scholarship, and leadership, and was honored as the 2009 Sonicare RDH Mentor of the Year. She combines 26 years of clinical dental hygiene practice with her BA and MA education in Communication Studies to specialize in communication issues in healthcare, especially health communication, intercultural communication, and health literacy. She serves on the Editorial Advisory Board of the CDHA Journal, edits the American Academy of Dental Hygiene Newsletter, and has published five volumes of her Dental Communication Brief Book Series. Toni will begin teaching “Health Communication and Multicultural Issues” in the Foothill College BSDH completion program in the spring of 2018. She welcomes comments and questions at tonisadamsrdh@earthlink.net



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Home Study Correspondence Course
“Lines and Circles: The Readability of Patient Reading Materials”

Circle the correct answer for questions 1-10

1. Which of the following is TRUE about literacy?
 - a. Half the US residents attempt to function with limited literacy
 - b. Low literacy is an independent risk factor for poor health
 - c. Levels of literacy and health literacy are usually related.
 - d. All of the above
2. Oral health literacy has been referred to as_____.
 - a. “the sixth vital sign”
 - b. “an unrecognized patient risk factor”
 - c. “a primary prevention factor”
 - d. “secondary literacy”
3. What percentage of patients cannot read a lot of the office literature and forms ?
 - a. 75%
 - b. 50%
 - c. 30%
 - d. 20%
4. Most health education literature is unreadable for the average high school graduate.
 - a. True
 - b. False
5. Dental professionals can help readability by:
 - a. Assuring handouts are readable for lower literacy levels
 - b. Providing more detail and explanations
 - c. Using guidelines to evaluate materials
 - d. All of the above
 - e. a and c
6. Content in a document should cover a few main points and OMIT_____.
 - a. Why the information is important
 - b. Reliable references
 - c. Simple and direct information
 - d. Technical background details
7. Writing style guidelines which help readability are:
 - a. Using fifth to sixth grade reading level
 - b. Using third to fourth grade reading level
 - c. Substitute common words for technical terms
 - d. a and c
 - e. b and c
8. Which of the following best enhances layout?
 - a. White space around borders and between columns/paragraphs
 - b. One third of the page should contain white space
 - c. One half of the page should contain white space
 - d. a and b
 - e. a and c
9. Which of the following layout features DOES NOT contribute to readability?
 - a. Use 12-14 point serif fonts
 - b. Use all-caps as headings
 - c. Use san-serif fonts as headings
 - d. Justify paragraphs to the left margin
10. What can dental health professionals do to help readability of their documents?
 - a. Review available resources on the web and internet
 - b. Review materials for readability; modify when needed
 - c. Supplement with oral explanations and demonstrations
 - d. All of the above

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