Readability Assessment of Online Tracheostomy Care Resources

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Abstract

Objective: To assess the readability of online tracheostomy care resources.

Study Design: Cross-sectional Study

Setting: Academic Center

Subjects and Methods: A Google search was performed for “Tracheostomy care” in January, 2014. The top fifty results were categorized into major versus minor websites, and patient- versus professional-oriented resources. These websites were evaluated with the following readability tools: Flesch Reading Ease Score (FRES), Flesch-Kincaid Grade Level (FKGL), Simple Measure of Gobbledygook (SMOG), and Gunning Frequency of Gobbledygook (GFOG).

Results: Readability scores for the websites were: FRES 57.21±16.71 (possible range = 0 to 100), FKGL 8.33±2.84 (possible range = 3 to 12), SMOG 11.25±2.49 (possible range = 3 to 19), and GFOG 11.43±4.07 (possible range = 3 to 19). There was no significant difference in all four readability scores between major (n = 41) and minor (n = 9) websites. Professional-oriented websites (n = 19) had the following readability scores: FRES 40.77±11.69, FKGL 10.93±2.48, SMOG 13.29±3.23, and GFOG 14.91±3.98. Patient-oriented websites (n = 31) had the following readability scores: FRES 67.29±9.91, FKGL 6.73±1.61, SMOG 10.01±1.64, and GFOG scores 9.30±2.27. Professional-oriented websites had more difficult readability scores than patient-oriented websites for FRES (p<0.00), FKGL (p<0.00), SMOG (p<0.00), and GFOG scores (p<0.00).

Conclusion: Online tracheostomy care resources were written at a level more difficult than the recommended fourth- to sixth-grade level for written health information. There was no significant difference in readability between major and minor websites. Professional-oriented websites were more difficult to read than patient-oriented websites.

Introduction

Tracheostomy is one of the most commonly performed operations in critically ill patients.1 AAO-HNS has published a Clinical Consensus Statement on Tracheostomy Care.1 11 of the 43 consensus statements discussed patient/caregiver education. The National Institute of Health (NIH) and American Medical Association (AMA) have recommended a 4-6th grade reading level in patient education2. We hypothesized that online resources for tracheostomy care do not meet these recommendations.

Methods

A Google search for the term ‘Tracheostomy Care’ was performed. The first fifty results were compiled and categorized into major/minor, and patient-/professional-oriented websites.

Four different readability scores (FRES, FKGL, SMOG, GFOG) were computed and analyzed.

Results

| Table 1. Overall readability scores for websites (n=50) |
|---------------------------------|-----------|-----------|-----------|
|                                | FRES      | FKGL      | SMOG      | GFOG      |
| Mean (SD)                      | 57.21 (16.71) | 8.33 (2.84) | 11.25 (2.49) | 11.43 (4.07) |
| Range                          | 23.1 – 86 | 4.6 - 15.3 | 7.55 - 16.27 | 4.29 - 21.71 |

Abbreviations: SD = Standard Deviation, FRES = Flesch Reading Ease Score, FKGL = Flesch-Kincaid Grade Level, SMOG = Simple Measure of Gobbledygook, and GFOG = Gunning Frequency of Gobbledygook

Discussion

Our study found that online tracheostomy resources were overall more difficult to read than the recommended levels suggested by the NIH and AMA. Professional-oriented websites had more difficult readability scores than patient-oriented websites. However, both patient- and professional websites were more difficult to read than standard recommendations. There were no differences in readability scores between major and minor websites. Our study confirmed the findings of previous studies in ENT.3,8

One should not solely rely on the readability scores of a website as they are merely predictors, and not definitive indicators, of reader comprehension. There are other variables that factor into a patient’s comprehension of website material (syntax, grammar, layout, diagrams, audio, etc.)

Our study had a few limitations. Firstly, scores might be altered by medical terms that cannot be replaced by smaller words, such as ‘tracheostomy.’ There are also terms that have few syllables but may be unfamiliar to the general public, such as ‘larynx.’ Secondly, there are other search engines besides Google. We chose Google because it is the the most commonly used search engine, accounting for 3/4 of all Internet searches.9 Different search terms can also lead to different results. Thirdly, our study was limited to the English language.

Conclusion

Readability assessment of online tracheostomy care resources showed that these websites are written at a level too difficult for the average American to comprehend easily based on NIH/AMA recommendations. A greater awareness is needed amongst physicians when referring patients to the Internet for health information and for authors of patient educational materials. A movement to construct health-related documents with lower readability scores would be only one facet of the solution to improving online patient resources.

References


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