

Assessment of Online Patient Education Resources from MBSAQIP Accredited Bariatric Centers in the United States

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Introduction

- The average American adult reads at an eighth-grade level while 20% cannot comprehend text beyond the fourth-grade level [1]
- The American Medical Association (AMA) and the National Institutes of Health (NIH) have recommended that the readability of patient education materials not exceed the sixth-grade reading level
- In the United States, roughly 256,000 bariatric procedures were performed in the United States during 2019. Sleeve gastrectomy accounted for 59.4% of the procedures making it the most performed weight loss operation in the US [2]
- Readability levels of patient materials across multiple medical specialties are reported to be written at a much higher level than the national recommendation [3-10]
- The aim of this study is to evaluate the reading level of online patient material provided by Metabolic and Bariatric Surgery Accreditation and Quality Improvement Program (MBSAQIP) Accredited Bariatric Centers in the United States.

Methods

- The American College of Surgeons website was used to access a list of all MBSAQIP Accredited Bariatric Centers in the US
- 508 centers out of the 852 accredited center were included in this study
- The website's general description of a sleeve gastrectomy was copied and pasted into the Readable.io service and the following readability tests were conducted via the program: Flesch-Kincaid Grade Level (FKGL), Gunning Fox Index (GFI), Coleman-Liau Index (CLI), and Simple Measure of Gobbledygook (SMOG)
- The four readability tests were compared to the recommended readability level (grade level ≤ 6.9) utilizing a one-sample t-test
- A p-value of <0.05 was used to determine statistical significance

Results

- Of 508 centers, one (0.2%) had met the recommended reading level in all four tests
- 28 center (5.5%) had fulfilled the recommended reading level in at least one of the four tests
- The mean test scores for all centers (n=508) were as follows: FKGL (10.94 ± 2.55), GFI (13.59 ± 2.96), CLI (11.9 ± 2.19) and SMOG (12.81 ± 2.16)
- All centers were compared to a value of 6.9 with a one-sample t-test revealing a p-value of well below 0.05 for all four tests and were considered statistically significant.

Discussion

- The advancement of bariatric surgery has lead to improved safety and patient outcomes
- Arguably the most important aspect of the pre-operative consultation is patient education.
- Our study demonstrated that the overwhelming majority of centers provide online educational material written at a reading level well above the recommendation by the NIH and AMA
- We propose that part of the criteria for becoming a MBASAQIP accredited center should include having patient materials that are written at the appropriate reading level
- Future studies evaluating the negative effect these elevated reading levels have on patient education are warranted.

Limitations

- Only a small fraction of the content provided by the website and descriptions that may be at an acceptable reading level may have been excluded
- Multimedia (pictures, videos, audio descriptions) content was not evaluated; these informative aids may impact the readers overall comprehension of the material
- People across the country will comprehend and retain information differently, thus adjusting only the reading level may not produce as satisfactory of a result as hoped for

References

1. Associate Professor And Coordinator-Master's Program In Trauma/critical Care. "Teaching Patients with Low Literacy Skills : AJN The American Journal of Nursing." *LWW*,journals.lww.com/ajnonline/fulltext/1996/12000/teaching_patients_with_low_literacy_skills.22.aspx.
2. https://asmbs.org/resources/estimate-of-bariatric-surgery-numbers
3. Kher, Akhil, et al. "Readability Assessment of Online Patient Education Material on Congestive Heart Failure." *Advances in Preventive Medicine*, Hindawi, 2017, www.ncbi.nlm.nih.gov/pmc/articles/PMC5471568/.
4. Huang, Grace, et al. "Assessment of Online Patient Education Materials from Major Ophthalmologic Associations." *JAMA Ophthalmology*, U.S. National Library of Medicine, Apr. 2015, www.ncbi.nlm.nih.gov/pubmed/25654639.
5. Kasabwala, Khushabu, et al. "Readability Assessment of the American Rhinologic Society Patient Education Materials." *International Forum of Allergy & Rhinology*, U.S. National Library of Medicine, Apr. 2013, www.ncbi.nlm.nih.gov/pubmed/23044857.
6. Colaco, Marc, et al. "Readability Assessment of Online Urology Patient Education Materials." *The Journal of Urology*, U.S. National Library of Medicine, Mar. 2013, www.ncbi.nlm.nih.gov/pubmed/23017508.
7. Kapoor, Karan, et al. "Health Literacy: Readability of ACC/AHA Online Patient Education Material." *Cardiology*, U.S. National Library of Medicine, 2017, www.ncbi.nlm.nih.gov/pubmed/28571004.
8. AlKhalili, Rend, et al. "Readability Assessment of Internet-Based Patient Education Materials Related to Mammography for Breast Cancer Screening." *Academic Radiology*, U.S. National Library of Medicine, Mar. 2015, www.ncbi.nlm.nih.gov/pubmed/25488695.
9. Sanghvi, Saurin, et al. "Readability Assessment of Internet-Based Patient Education Materials Related to Facial Fractures." *The Laryngoscope*, U.S. National Library of Medicine, Sept. 2012, www.ncbi.nlm.nih.gov/pubmed/22833340.
10. Cherla, Deepa V, et al. "Readability Assessment of Internet-Based Patient Education Materials Related to Endoscopic Sinus Surgery." *The Laryngoscope*, U.S. National Library of Medicine, Aug. 2012, www.ncbi.nlm.nih.gov/pubmed/22685030