A Comparative Readability Analysis of Online Patient Information Regarding Breast Reconstruction Following Mastectomy

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Introduction: The internet is a widely-used resource for patients who seek surgical information. Many patients have wrong expectations of treatment options due to low quality surgical information online[1]. High quality patient information should not exceed a 7th-grade reading level according to the United States Department of Health and Human Services (USDHHS)[2]. We undertook a comparative readability assessment of patient information regarding breast reconstruction following mastectomy.

Method: Materials were downloaded from 7 websites in January 2016: Breast Cancer Network Australia (BCNA), British Association of Plastic Reconstructive and Aesthetic Surgeons (BAPRAS), Canadian Cancer Society, Cancer Research UK, Johns Hopkins Breast Center, Mayo Clinic, National Institutes of Health (NIH). The text was processed and formatted in Microsoft Word. Specific anatomical and medical terms were excluded to limit bias. A readability assessment was undertaken on the remaining text using 6 quantitative formulas: Automated Readability Index, Coleman-Liau Index, SMOG Index, Gunning-Fog score, Flesch-Kincaid Grade level and Flesch-Kincaid Reading Ease using the Readability Studio program(Oleander Software).

Results: The edited and original texts had almost identical mean grade score (±0.07). Johns Hopkins Breast Center had the highest mean grade score (12.8±2). Mayo Clinic had the lowest mean grade scores (10.7±2). ANOVA analysis demonstrated no statistical difference between the grade scores when comparing websites ($p>0.05$). The mean Flesch-Kincaid Reading Ease score was 53, which compares to a reading level of >16 years old. The overall mean grade score was 11.9, which compares to a senior high school student in US.

Conclusion: The mean grade scores of patient resources are considerably higher than the recommended level of 7thgrade or 12-13 years old. Simpler and clearer materials would be more suitable to the general public in the US and internationally.

Reference Citations:

1. McKinley J, Cattermole H , Oliver CW. The quality of surgical information on the Internet. *J R Coll Surg Edinb.* 1999; 44:265-8.

2. Walsh TM1, Volsko TA. Readability assessment of internet-based consumer health information. *Respir Care.* 2008 Oct; 53:1310-5.