The Quality of Online Information in Cardiac Surgery

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Introduction

Why worry about online information?

What standards should we be aiming for?

Methods

Results

Discussion points
Introduction

- Difficult to assess ‘high quality’ objectively
- Different online tools available
  - Gunning-Fog Index
  - Flesch Score
  - LIDA tool
- Standardised assessment protocol needed
- 3 different topics to assess this methodology – MVR, TVR, CABG
- Output compared to commonly used sources
Why assess online information?

- The internet is an expanding tool for healthcare
- 77% of UK population have access to internet
- 33% of patients look up medical information online
- 11% research conditions before outpatient appointments
- Only 6% of people view beyond first page of Google
- Identifying ‘high-quality’ information can benefit patients
The needs of the public

- Information should be aimed at general public
- Average reading age in UK = 9.4 years
- Patients reading information not aimed at them may lead to people not having “fully informed” consent if this alters their opinion
- Patients may think their treatment is ‘inferior’ to that on an advertising site
- Patients want to be involved with decisions and we, as doctors, should facilitate this by any means necessary
The requirements of a Doctor

The GMC State:

- “Give patients the information they want or need in a way they can understand”

- “You should encourage patients and the public to take an interest in their health and to take action to improve and maintain it.”

- “Share with patients, in a way they can understand, the information they want or need to know about their condition, its likely progression, and the treatment options available to them, including associated risks and uncertainties”
The Assessment Tools
Gunning-Fog Index

- Number of years of formal education required to read information
- Higher scores are harder to read
- Score of 12 approximates to A-Level graduate

Examples
- Spot The Dog – 2.8
- The Sun – 8.8
- The Financial Times – 12.51
The Assessment Tools
Flesch Score

- Estimated reading level required - Lower scores are harder to read
  - 90-100 – Easily understood by 11-year-old students
  - 60-70 – Easily understood by 13- to 15-year-old students
  - 0-30 – best understood by university graduate

- Examples
  - Spot The Dog – 92.4
  - The Sun – 70.8
  - The Financial Times – 54.29
The Assessment Tools
LIDA Tool

- Only tool with subjective element
- Objectivity improved if all websites assessed by same person
- Provides a score out of 54 for accessibility – bbc.co.uk = 53/54

Usability and reliability
- Questions with ‘never’, ‘sometimes’, ‘mostly’, or ‘always’ responses

Usability
- Site design, format and ease of finding required information

Reliability
- Quality control, expert authors, regular updates, citations
Methods

» Top 3 search engines – Bing, Google, Yahoo – searched

» Terms used:
  » Coronary artery bypass graft
  » Mitral valve replacement
  » Tricuspid valve replacement

» Top 50 results returned for each search were analysed

» Duplicates, multimedia, pay-per-view, and journals were removed

» Standard ‘reference’ sources used – The Sun & The Financial Times
Results - CABG

- Number of websites analysed = 61
- Mean Gunning-Fog Index: 15.17 (±2.94)
- Mean Flesch Readability Score: 46.78 (±13.69)
- LIDA mean scores:
  - Accessibility: 45.75 (±8.01) = 84.72%
  - Reliability: 19.09 (±8.18) = 63.63%
  - Usability: 10.36 (±1.76) = 86.33%
  - Total: 73.21 (±14.21) = 76.26%
Results - MVR

- Number of websites analysed = 60
- Mean Gunning-Fog Index: 14.64 (±3.77)
- Mean Flesch Readability Score: 43.39 (±18.04)
- LIDA mean scores:
  - Accessibility: 44.46 (±5.19) = 82.33%
  - Reliability: 16.85 (±7.65) = 56.17%
  - Usability: 11.31 (±0.92) = 94.25%
  - Total: 72.61 (±10.21) = 75.64%
Number of websites analysed = 21

Mean Gunning-Fog Index: 16.07 (±3.51)

Mean Flesch Readability Score: 35.32 (±15.37)

LIDA mean scores:
- Accessibility: 42.86 (±10.72) = 79.37%
- Reliability: 8.66 (±8.77) = 28.88%
- Usability: 7.81 (±2.87) = 65.08%
- Total: 59.33 (±16.66) = 61.8%
Results – Readability

Gunning-Fog Index

Spot the Dog
The Sun
Average reading age
The FT
MVR
CABG
TVR

Source of Information

Gunning-Fog Index Score

0
2
4
6
8
10
12
14
16
18

Spot The Dog
The Sun
Average reading age
The FT
MVR
CABG
TVR

Source of Information
Results – Readability

Flesch Readability Score

Source of Information

Spot The Dog

The Sun

The FT

CABG

MVR

TVR

Flesch Readability Score
Results – LIDA Tool

![Graph showing LIDA scores for CABG, MVR, and TVR in Accessibility, Reliability, Usability, and Total areas.](image)
Discussion

- Large variation in the quality of online information available
- No single resource scored 100% in all assessments
- The readability assessment highlighted that resources are written in a manner not suitable for the general population
- The accessibility of websites was good, but the reliability and usability needs to be improved
Future websites should aim to:
- Use online tools prior to publishing
- Improve their readability
- Improve their reliability
- Improve their Usability

An assessment of the quality of online information can empower patients if doctors make use of these tools
Conclusions

- Online information is increasingly accessed by patients
- Current information online is not suitable for our audience
- The reading level of websites is too high
- The reliability is too low
- The usability is too low
- The accessibility is fine (but not perfect)
- New websites should use objective tools during development