Readability and Variability Among Online Resources for Patella Dislocation: What Patients are Reading

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Introduction

• The use of the internet has increased substantially over the past decade, from 26.6% in December 2009 to 58.8% in June 2019.

• Inaccurate information online can negatively affect the patient-physician relationship. Patients may feel that the information on the Internet was the “same as” or “better than” the information from their doctors.

• Previous studies have demonstrated that information available online may be unreliable, inaccurate, and difficult for patients to understand.
Study Aims

• Evaluate the readability, content, and authorship of websites related to patella instability in order to assess what patients are reading online.

• Determine the reading level of information presented online using the Flesch Reading Scale and Grade.

• Assess the accuracy and reliability of websites using Health On the Net Foundation (HON) certification.

• Evaluate the authorship of websites and how it affects the content and quality of information.
Methods

• Four terms related to patella dislocation (patella instability, kneecap dislocation, dislocated kneecap, and patella dislocation) were searched on Google, Yahoo, and Bing search engines.

• The readability of websites was analyzed using Flesch-Reading tools.

• Content was assessed using a scoring guide adapted from previous publications.
Methods

- The website content score was calculated and averaged from the evaluation of two scorers using a set criteria that was adapted from previous studies.
Results

- A total of 37 unique websites were identified.

- 13 of 37 (35%) websites were authored by physicians with an M.D. degree and 10 (27%) were authored by orthopaedic institutions/clinics.

- The mean Flesch-Kincaid Grade for all websites was $10.8 \pm 3.5$ and the mean Flesch Reading Ease Score was $47.6 \pm 18$, indicating that on average, the websites were moderately difficult to read for a patient.
Results

- The average content score for all websites was 51.8 out of 100 points.

- Websites that were written by non-physicians had the highest content score (65.0).

- Only 8 of 37 (22%) websites had a HON seal.
Results – Website authorship

- Physician: 35.1%
- Orthopaedic In...: 27.0%
- Physical Therapy: 10.8%
- Non-Physician: 8.1%
- Unidentified: 13.5%
- Misc: 5.4%
Results – Website readability

- Flesch Reading Ease
- Flesh-Kincaid Grade Level

Website ID number: 1 to 37

Score: 0 to 90
## Results – website content and readability scores

<table>
<thead>
<tr>
<th>Category</th>
<th>No. of websites</th>
<th>Website content analysis (0-100)</th>
<th>Flesh reading ease</th>
<th>Flesch Kincaid grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physician (MD)</td>
<td>13</td>
<td>36.7</td>
<td>45.4</td>
<td>10.9</td>
</tr>
<tr>
<td>Orthopaedic Institution/Clinic</td>
<td>10</td>
<td>46.8</td>
<td>40.2</td>
<td>12.0</td>
</tr>
<tr>
<td>Unidentified</td>
<td>5</td>
<td>42.0</td>
<td>60.6</td>
<td>9.4</td>
</tr>
<tr>
<td>Physical Therapist</td>
<td>4</td>
<td>61.3</td>
<td>40.3</td>
<td>12.0</td>
</tr>
<tr>
<td>Non-Physician</td>
<td>3</td>
<td>65.0</td>
<td>45.7</td>
<td>10.2</td>
</tr>
<tr>
<td>Misc (online companies)</td>
<td>2</td>
<td>58.8</td>
<td>53.4</td>
<td>10.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>37</strong></td>
<td><strong>51.8</strong></td>
<td><strong>47.6</strong></td>
<td><strong>10.8</strong></td>
</tr>
</tbody>
</table>
Limitations

- Scientific websites, such as PubMed, were excluded.

- Only the top 10 results from each search engine were included.

- Analysis was limited to websites that were written in the English language; websites written in other languages could yield different results.

- There are other ways to assess for high quality information besides HON certification, such as The Information Standard (TIS) or Discern scores.
Conclusions

• Online information regarding patella instability is inaccurate, unreliable, and difficult for patients to understand.

• Patients should be cautious about the information that they read online.

• Physicians should recommend reliable websites, so patients are exposed to appropriate information on the internet.


