ASSESSMENT OF ONLINE SITES RELIABILITY, ACCOUNTABILITY, READABILITY AND SPANISH TRANSLATION FOR INTRAVITREAL INJECTIONS

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FINANCIAL DISCLOSURES

None
SUMMARY

Academic websites more reliable than private
No difference in reliability according to website rank
Significant improvement in reliability needed among all sites to allow patients to have a better understanding of their disease
Providing authorship and references can improve reliability
Improving readability and incorporating Spanish translation
CO-AUTHORS

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Diana Do, MD
Ehsan Rahimy, MD
BACKGROUND – ONLINE HEALTH INFORMATION

Many patients use the internet to supplement their information from physicians

• 72% of internet users have searched the web for health related information

Online health information impacts patient understanding of disease and decision making
Benefits of online health information
• Better understanding of disease and treatments
• Shared decision making

Drawbacks of online health information
• Unregulated
• Variable quality and accuracy
• Readability
OBJECTIVE

To quantitatively assess the reliability, quality of content, readability and option for Spanish translation of online health information regarding intravitreal injections
METHODS

Cross sectional study: October-November 2019

Google Search
  • *Eye injections, intravitreal injections, anti-VEGF injections*
  • Top 20 unique websites included

Websites grouped
  • Academic/reference source vs private websites
  • Top 5 ranked websites, other 15 websites
METHODS

Quality, Accountability and Reliability

1. DISCERN criteria
   • First 8 questions catered towards assessing reliability of website
   • Questions 9-15 evaluates the quality of content regarding the treatment
   • Scored 1-5:
     • 1: website does not mention the quality criteria
     • 2-4: website partially fulfilled the quality criteria
     • 5: fully and clearly addressed the quality criteria
**METHODS – HONcode**

Quality and accountability

7 criteria

- Ownership, purpose, authorship, qualification, attribution (references and sources of information), interactive and currency (recent update to website)

Scale 0 to 2

Sum of HONcode calculated for all 7 criteria (14 points)
METHODS — GRADING

20 websites independently graded
  • Nadim Rayess, MD; Ehsan Rahimy, MD

Difference adjudicated
  • Diana Do, MD
METHODS - READABILITY

Online calculator (readabilityformulas.com)
7 indices
Consensus grade level
METHODS – SPANISH TRANSLATION

All 20 websites were checked to determine if they provided Spanish translation
METHODS – OUTCOME MEASURES

Primary outcome measure
• Comparing quality and accountability scores between academic and private websites using DISCERN and HONcode

Secondary outcome measures
• Evaluating readability and presence of Spanish translation between academic and private websites
• Top 5 ranked websites and other 15 websites: Reliability, accountability, readability and Spanish translation
RESULTS

20 websites were included
- 11 academic websites
- 9 private websites
## RESULTS – ACADEMIC VS PRIVATE WEBSITES

<table>
<thead>
<tr>
<th></th>
<th>Academic (n=11)</th>
<th>Private (n=9)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DISCERN (mean)</strong></td>
<td>Mean 3.11</td>
<td>Mean 2.23</td>
<td>&lt; 0.01</td>
</tr>
<tr>
<td></td>
<td>SD  0.46</td>
<td>SD  0.61</td>
<td></td>
</tr>
<tr>
<td><strong>DISCERN Credibility</strong> (D1-8)</td>
<td>Mean 3.41</td>
<td>Mean 2.10</td>
<td>&lt; 0.01</td>
</tr>
<tr>
<td></td>
<td>SD  0.69</td>
<td>SD  0.60</td>
<td></td>
</tr>
<tr>
<td><strong>DISCERN Treatment</strong> (D9-15)</td>
<td>Mean 2.77</td>
<td>Mean 2.38</td>
<td>0.18</td>
</tr>
<tr>
<td></td>
<td>SD  0.53</td>
<td>SD  0.67</td>
<td></td>
</tr>
<tr>
<td><strong>HONcode (sum)</strong></td>
<td>Mean 10.91</td>
<td>Mean 6.44</td>
<td>&lt; 0.01</td>
</tr>
<tr>
<td></td>
<td>SD  2.66</td>
<td>SD  3.36</td>
<td></td>
</tr>
<tr>
<td><strong>Readability consensus (grade level)</strong></td>
<td>Mean 11.73</td>
<td>Mean 11.78</td>
<td>0.94</td>
</tr>
<tr>
<td></td>
<td>SD  1.68</td>
<td>SD  1.48</td>
<td></td>
</tr>
<tr>
<td><strong>Spanish translation (%)</strong></td>
<td>45%</td>
<td>22%</td>
<td>0.28</td>
</tr>
</tbody>
</table>
### RESULTS – TOP 5 RANKED WEBSITES VS OTHER 15

<table>
<thead>
<tr>
<th></th>
<th>Top 5 websites</th>
<th>Other 15 websites</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>DISCERN (mean)</td>
<td>2.89</td>
<td>2.66</td>
<td>0.54</td>
</tr>
<tr>
<td>DISCERN Credibility (D1-8)</td>
<td>3.04</td>
<td>2.75</td>
<td>0.51</td>
</tr>
<tr>
<td>DISCERN Treatment (D9-15)</td>
<td>2.71</td>
<td>2.55</td>
<td>0.73</td>
</tr>
<tr>
<td>HONcode (sum)</td>
<td>10.00</td>
<td>8.53</td>
<td>0.51</td>
</tr>
<tr>
<td>Readability consensus (grade level)</td>
<td>11.20</td>
<td>11.93</td>
<td>0.37</td>
</tr>
<tr>
<td>Spanish translation (%)</td>
<td>40%</td>
<td>33%</td>
<td>0.50</td>
</tr>
</tbody>
</table>
DISCUSSION – CREDIBILITY WEBSITE

Need for increased regulation

• Authorship information
• References incorporated in text and bibliographies
• Review and update website on a regular basis

Implementing these changes would increase websites overall credibility for patients
Consensus readability score above 11th grade for both academic and private websites
Significantly higher than the American Medical Association and National Institute of Health recommended grade level of 6
Lower overall health literacy is associated with increased complications, hospitalizations, poor understanding of disease and a rise in health care costs
DISCUSSION – SPANISH TRANSLATION

Health literacy impacts Hispanic patients to a greater extent

• Lower education
• Language barriers
• Access to healthcare

Spanish translation: 45% academic websites and 22% private websites
**DISCUSSION – WEBSITE RANK**

Most patients click on top 2-5 websites
No difference in reliability, accountability, readability or Spanish translation between top 5 and other 15 websites
Search engines website rank metrics do not incorporate quality of content indices
LIMITATIONS

Websites were only evaluated using a single search engine (Google)

Does not directly assess patient’s health literacy who access the internet

- It is possible that patients who are undergoing searches have a higher health literacy and understanding
CONCLUSIONS

Academic websites more reliable

Significant improvement in reliability needed among all sites to allow patients to have a better understanding of their disease

Providing authorship and references can improve reliability

Improving readability and incorporating Spanish translation will allow patients of all health literacies to understand content

Adding certification to websites via AAO, ASRS or HONcode can help patients know which websites to trust and can also help physicians when referring patients to websites
REFERENCES


THANK YOU

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