Evaluation of Publicly Available Patient Medical Education Videos on Breast Cancer

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Background

Breast cancer is the most commonly diagnosed cancer and the leading cause of cancer death in women. On average, one woman is diagnosed with breast cancer every 2 minutes.¹

In one study, 53.5% of patients stated they used the internet for medical education. 60% of these patients believed the information provided was "the same as" or "better than" the information provided from their doctors.²

Over 130,000 patients diagnosed with breast cancer will research their own disease state using the internet.³

Patients using the internet for medical information may have difficulty finding complete and accurate information which may influence their decisions.⁴

Objective

To evaluate the quality and validity of breast cancer patient medical education videos.

Methods

A Google search with the key phrase “breast cancer overview” was conducted on January 8, 2019. The first twenty videos of the search which met the inclusion and exclusion criteria were evaluated.

Any video with the search term with a length of at least thirty seconds was evaluated. Videos that were sponsored by a pharmaceutical company, targeted towards healthcare providers, and/or focused on a specific medical category were excluded from this analysis.

Since there is no standard assessment tool available for patient medical education video, a rubric was developed to evaluate medical content and user experience. Metrics were also collected for each video, if available.

The following categories were assessed:

- Medical Content
  - Prevalence
  - Diagnosis/Staging
  - Treatment Options
  - Cost of Treatment
  - Treatment Side Effects
- Medical Accuracy/Current Material
- Cater to Intended Audience
- Information Relevant to Disease State
- Patient-Friendly Language
- Follow-Up Guidance
- Emotional Impact
- Visual Appealing
- Video Quality

- User Experience
- Patient-Friendly Language
- Cater to Intended Audience
- Medical Accuracy/Current Material
- Video Quality
- Overall Engagement
- Smooth Transitions/User Objective
- Follow-Up Links or Guidance
- Visual Appealing
- Emotional Impact/Patient Stories

Table 1: Average Score of 17 Videos

<table>
<thead>
<tr>
<th>Category</th>
<th>Average Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical Content</td>
<td>5.33/10</td>
</tr>
<tr>
<td>User Experience</td>
<td>3.15/50</td>
</tr>
</tbody>
</table>

Results

The medical content category was arranged into 10 subcategories, each assigned one point for a maximum of 10 points. User experience was also arranged into 10 subcategories each rated between 0.5-4 for a maximum of 50 points.

Five pharmacists independently reviewed each video and adjudicated score discrepancies.

Of 20 videos identified, three videos were not evaluated because they were duplicates or links were not available for viewing.

Individual scores for user experience directly correlated with the individual scores for medical content (r=0.95).

From available metrics (14 of 17 evaluated videos), the average number of views per day was 2.23; however, this did not correlate with medical content nor user experience with correlation coefficient r=0.10 and r=0.22, respectively.

Table 2: Average Views/Day by Organization Type That Developed Video

<table>
<thead>
<tr>
<th>Organization Type</th>
<th>Average Views/Day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital (n=2)</td>
<td>10.5</td>
</tr>
<tr>
<td>Community (n=10)</td>
<td>6.5</td>
</tr>
<tr>
<td>Academic (n=2)</td>
<td>6.5</td>
</tr>
</tbody>
</table>

Figure 1: Medical Content vs. User Experience

Figure 2: Average Views/Day By Organization Type That Developed Video

Figure 3: User Experience

Methods (Cont’d)

The primary limitation of this data analysis is that the rubric is not a validated measure to assess patient medical education.

Google search results may vary depending on different individual settings and networks.

There was a small sample size of 20 videos, ultimately 17 that were evaluated.

Not all videos provided metrics, only 14 of 17 videos were assessed for views/day.

Conclusions

Previous literature evaluating breast cancer patient education videos is limited to specific parameters and unable to provide a comprehensive analysis of patient education.

Based on our results, user experience is positively correlated to medical content, but not all videos were catered to patients.

Academia-provided videos had the most average views per day compared to the other types. However, the number of videos evaluated each category was not consistent. This finding needs to be validated through a large study with larger and similar sample sizes for each category.

Patient videos with higher medical content coverage generally have better user experience, but these higher quality videos generally do not reach the patients in need. Although more studies are required to further confirm this finding, increasing efforts to promote these higher quality videos may help provide patients with the appropriate medical education they are seeking.

Additional resources and prioritization are needed given that many patients rely on digital resources to gather information on their disease.

References


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Ethics Statement

All contributing authors have no financial interest in any commercial entity that may have a direct or indirect financial interest in the subject of this presentation. This project was approved by the institution for this presentation.