A Smartphone-Optimized Web Site for Conveniently Viewing Otolaryngology Journal Abstracts

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Abstract

Access to the medical literature has not kept pace with the mobile revolution. We aimed to (1) gauge interest in a smartphone-optimized Web site for conveniently accessing otolaryngology literature and (2) create an easy-to-access and convenient Web site that displays otolaryngology journal abstracts in a format optimized for smartphones. A survey was sent to physicians of a major US academic otolaryngology–head and neck surgery department. Demographics, literature-browsing habits, and barriers to staying updated were assessed. The response rate was 87%. Ninety-one percent of respondents used a smartphone, and 85% wished they could stay more up to date with the otolaryngology literature. Most respondents believed a convenient smartphone-optimized Web site could help them achieve this goal. A Web site was then developed in collaboration with a university creative department as a proof of concept. The site uses a simple RSS aggregator to display journal abstracts formatted for smartphone-sized screens (www.otosurg.com).

Keywords

otolaryngology—head and neck surgery, literature, Web site, mobile, smartphone, abstract, app, RSS

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A n explosion of research has made it challenging for clinicians to stay abreast.1,2 Paralleling this growth has been an expansion in technologies to access this information. While reading journals was limited to print subscriptions in the 1980s, the Internet in the 1990s ushered in computer access. In today’s mobile revolution, Internet connectivity has further progressed; however, access to medical literature has not kept pace. Of more than a million mobile-designed Web sites and apps,3 only a fraction contains content aimed at updating practitioners. Within otolaryngology, only a handful of products exist whose usability is highly variable.

Tools that optimally employ technology to connect physicians with accessible information have tremendous potential. The evidence-based resource UpToDate has become phenomenally successful, with more than 850,000 users and an institutional subscription price of more than $1.5 million per year (J. Floyd, MD, University of Washington Housestaff Association, e-mail communication, April 29, 2008).4 A mobile app is available5; however, otolaryngology is not included (H. N. Sokol, MD, Wolters Kluwer Health, e-mail communication, March 21, 2014).

Today, a variety of portable Internet-connected devices exists. To truly allow anywhere, on-demand access, efforts should focus on smartphones, the most portable device category. Tablet-optimized journal apps and Web sites have recently appeared6; however, those designed for smartphones are rarer. In addition, each journal uses different programs/formats, and most are not compatible with all platforms. If the goal is to allow easy, convenient access, current efforts have largely failed. In this report, we assess demand for such access within otolaryngology. We then introduce a proof-of-concept mobile Web site explicitly designed for easily viewing otolaryngology literature content on smartphones.

Materials and Methods

Survey

An anonymous 9-item questionnaire was distributed to physicians of the Department of Otolaryngology–Head and Neck Surgery at the University of Washington (Supplemental Figure S1; the survey gauged cell phone usage patterns, demographic information, literature browsing habits,

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and barriers to staying updated with the literature; available at otojournal.org). Data analysis was performed in STATA 11.0 (Statacorp, College Station, Texas). Comparisons were conducted using \( \chi^2 \) or Fisher exact tests. Institutional review board exemption was obtained.

**Web Site**

We chose the domain www.otosurg.com (and www.otosurg.org), in part because its brevity lends to easy typing on a smartphone. The site was designed as an otolaryngology journal abstract aggregator optimized for display on small smartphone screens. Abstracts are pulled from Web sites using RSS (Really Simple Syndication). The site thus functions as a Web-based, smartphone-optimized RSS reader.

The Web site does not require a login and is free. Because of low maintenance costs, there are no advertisements. The layout and RSS engine were designed with Creative Communications at the University of Washington. The site was built with BBEdit (Bare Bones Software, Inc, North Chelmsford, Massachusetts), HTML, PHP, and CSS.

**Results**

**Study Results**

Eighty-seven percent (32/37) of surveys were returned. Most respondents (91%) used a smartphone. Although 47% browsed recent journal issues at least weekly, 84% wished they could stay more up to date. Perceived barriers appear in Table 1.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Agree/Strongly Agree, %</th>
<th>Neutral, %</th>
<th>Disagree/Strongly Disagree, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inadequate time to read</td>
<td>78</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>No easy way to read literature on smartphones</td>
<td>57</td>
<td>22</td>
<td>22</td>
</tr>
<tr>
<td>Not personally receiving paper subscriptions to all the journals one would like to browse</td>
<td>51</td>
<td>13</td>
<td>37</td>
</tr>
<tr>
<td>Journal Web sites are not as convenient to read as modern newspaper/magazine Web sites</td>
<td>50</td>
<td>19</td>
<td>31</td>
</tr>
<tr>
<td>Not having easy access to paper subscriptions of all the journals one would like to browse</td>
<td>41</td>
<td>13</td>
<td>47</td>
</tr>
<tr>
<td>No convenient way to browse and read articles from new journal issues as they come out</td>
<td>40</td>
<td>22</td>
<td>37</td>
</tr>
</tbody>
</table>

\( n = 32; 87\% \) response rate.

**Otosurg Web Site**

The site otosurg.com displays a list of compatible otolaryngology journals (Figure 1A). Clicking on a journal name brings up a list of abstracts from recent issues (Figure 1B). Abstracts are continuously scrolled from one after another for easy browsing and reading. Tapping the abstract’s title goes to the article page of the corresponding journal’s actual Web site. Although the current intent of otosurg.com is to allow rapid abstract review rather than full article access, any subscribers to the journal may then log in to view the full text. (Because of copyright restrictions, full article text cannot be currently viewed using the otosurg.com site itself.)

**Discussion**

Our survey revealed a great desire for otolaryngologists to stay more up to date, with time being the greatest challenge. While finding undisturbed time blocks is difficult, one solution is to use smaller time segments more effectively. Social networking and news media companies have capitalized on this, providing ubiquitously accessible and easily digested parcels of information. These moments of downtime are innumerable. Fortunately, the medical literature already employs predigested summaries in the format of abstracts. The weakest link, therefore, is the effective delivery to users. Our solution was to develop a simple, rapidly accessible smartphone-optimized Web site that serves a single function of displaying recent abstracts from otolaryngology journals.

We chose smartphones because they are more widely used than tablets and have a small screen ideal for reading abstracts. We chose a specially designed Web site, rather than an app (mobile application),\(^9\) for several reasons. First, mobile Web sites are platform agnostic. In contrast, apps must be developed for specific operating systems (raising expense and lowering compatibility). Many leading otolaryngology journals have apps, but few currently support more than 1 operating system. Second, mobile Web sites are simpler to develop. Third, apps are suited for more complex content, whereas a Web site is sufficient (and
arguably better) for simple text. Fourth, Web sites are more initially accessible, obviating the need to download an app.

One limitation of our small survey was that results might not be generalizable. A limitation of our Web site is the lack of the ability to flag noteworthy abstracts for later review or full-text retrieval. Such features could be introduced later.

In conclusion, most surveyed otolaryngologists wished they could stay more up to date with the literature, citing time as the chief hurdle. Otosurg.com is a proof-of-concept modern tool that might allow users to harness downtime to peruse abstracts.

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Author Contributions
Justin S. Golub, survey design, data collection, data analysis, Web site design, article writing, article editing; Arun Sharma, data analysis, statistics, article writing, article editing; Ravi N. Samy, critical analysis, article editing.

Disclosures
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Supplemental Material
Additional supporting information may be found at http://otojournal.org/supplemental.

References