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Evaluating the quality of Internet health resources in pediatric urology

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Abstract *Purpose:* Many patients and their parents utilize the Internet for health-related information, but quality is largely uncontrolled and unregulated. The Health on the Net Foundation Code (HONcode) and DISCERN Plus were used to evaluate the pediatric urological search terms 'circumcision,' 'vesicoureteral reflux' and 'posterior urethral valves'.
Materials and methods: A google.com search was performed to identify the top 20 websites for each term. The HONcode toolbar was utilized to determine whether each website was HONcode accredited and report the overall frequency of accreditation for each term. The DISCERN Plus instrument was used to score each website in accordance with the DISCERN Handbook. High and low scoring criteria were then compared.
Results: A total of 60 websites were identified. For the search terms 'circumcision', 'posterior urethral valves' and 'vesicoureteral reflux', 25—30% of the websites were HONcode certified. Out of the maximum score of 80, the average DISCERN Plus score was 60 (SD = 12, range 38—78), 40 (SD = 12, range 22—69) and 45 (SD = 19, range 16—78), respectively. The lowest scoring DISCERN criteria included: 'Does it describe how the treatment choices affect overall quality of life?', 'Does it describe the risks of each treatment?' and 'Does it provide details of additional sources of support and information?' (1.35, 1.83 and 1.95 out of 5, respectively).
Conclusions: These findings demonstrate the poor quality of information that patients and their parents may use in decision-making and treatment choices. The two lowest scoring DISCERN Plus criteria involved education on quality of life issues and risks of treatment. Physicians should know how to best use these tools to help guide patients and their parents to websites with valid information.

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Introduction

Parents and their children with pediatric urologic disorders seek guidance and counsel from their physician for the diagnosis, treatment and outcomes of disease. Traditionally, medical information was limited to professional publications and the physician's office; however, many patients are now utilizing the Internet as a resource to provide further information on disease, treatments and outcomes. The use of the Internet to access health-related information has rapidly increased over the past decade, and recent studies report that as many as 66% of American adults utilize the Internet specifically for health-related information, with more than half of Internet users accessing health information at least once a month [1–6]. Of those who utilize the Internet for health information, a recent poll reported that 86% believe the health information on the Internet to be reliable [4]. Nevertheless, the quality of health-related information on the Internet varies greatly and is largely uncontrolled and unregulated [7–9]. Some websites provide accurate and well-referenced information on treatment options and long-term outcomes, while others may be biased or inaccurate. Inaccurate or low-quality information can mislead patients, which may contribute to unrealistic expectations and poor decision-making, resulting in dissatisfied patients [10–12]. Moreover, utilization of the Internet to aid in informed decision-making could potentially improve health outcomes and patient satisfaction [13,14].

To aid consumers in identifying reliable health information on the Internet, several different validated tools have been developed, including Health on the Net Foundation Code (HONcode) and DISCERN Plus. In order to better understand the type of information available to patients on the Internet, this project was designed to address information quality for pediatric urological search terms. The quality of website information was assessed for three pediatric urological search terms, 'circumcision', 'vesicoureteral reflux' and 'posterior urethral valves'. Furthermore, the highest and lowest scoring areas of the DISCERN Plus criteria were examined to better assess the strengths and weaknesses of Internet-based pediatric urological health information.

Methods

Google.com was selected as it is the most commonly used Internet search engine [15]. Google uses both location and email information to inform its search results. To avoid this, each search was performed at three different locations (Philadelphia, PA, San Antonio, TX, and San Francisco, CA) around the US with all browser history erased and email services logged off and closed. Since the majority of web searches do not proceed past the first page of results (10 websites), the first 20 websites were identified for each term [3,16]. News articles, Google-sponsored direct links and video results were excluded from the search results. Three separate searches were performed for the following terms: 'circumcision', 'posterior urethral valves' and 'vesicoureteral reflux'.

For each term, each location-based search was cross-referenced with one another. A scoring rubric was developed in order to assemble the final list. First, if a website appeared in all three searches, that website was added to the master list. If not all 20 spots were filled, websites that were in at least two of the searches were included to fill the remaining slots of the master list. Websites were then separately evaluated by both the HONcode and DISCERN Plus instruments to assess the validity of the information contained on the websites.

HONcode

HONcode is a United Nations approved agency that accredits websites that publish transparent health-related information [17]. A council of individuals from Europe and North America with varying expertise, including physicians and professors of health policy and medical informatics, governs the foundation. Individual websites can apply for accreditation from this foundation, which examines websites using ethical standards aimed at offering quality health information.20 Health on the Net Foundation. Available at: http://www.hon.ch/ accessed April 15, 2010. The tool assesses eight domains, which are described in Table 1. HONcode provides a toolbar that can be downloaded into a web browser. The HONcode symbol illuminates on the toolbar when a website has been accredited by HONcode, indicating quality health information to the consumer. We utilized the toolbar and recorded whether each website was HONcode accredited, and reported the overall frequency of accreditation for each of the three pediatric urology diseases.

DISCERN Plus

The DISCERN project, initially funded by the National Health Service of the UK, was designed to judge the quality of written information on health-related Internet websites.

Table 1 HONcode principles.[a]

HONcode principle	Description of principle
1. Authoritative	Indicate the qualifications of the authors
2. Complementarity	Information should support, not replace, the doctor–patient relationship
3. Privacy	Respect the privacy and confidentiality of personal data submitted to the site by the visitor
4. Attribution	Cite the source(s) of published information, data and medical and health pages
5. Justifiability	Site must back up claims relating to benefits and performance
6. Transparency	Accessible presentation, accurate email contact
7. Financial disclosure	Identify funding sources
8. Advertising policy	Clearly distinguish advertising from editorial content

[a] Reproduced from the Health on the Net website [17].