Google It! Evaluation of the Quality of Online Information Regarding Concussion

Ryan A. Cook, Dusty J. Atterbury
Faculty: Gina M. Berg, PhD

Department of Physician Assistant, College of Health Professions

Abstract: This study compared the online information available to consumers regarding the definition, symptoms, treatment and return to play recommendations after suffering a concussion. The top ten non-media websites were identified using the key term 'concussion' using Google. Quality and accuracy of the websites were compared with the Consensus Statement on Concussion in Sports. Each website contained a general list of signs, symptoms, and home treatment options. One website contained no information and eight sites recommended seeing your clinician before returning to play. The quality of information consumers can find on the Internet is generally accurate but widely varies in coverage. Searching for health information online is extremely popular and consumers should be aware of the inaccurate information that is not peer reviewed.

1. Introduction

Searching for health information online and using general-purpose search engines such as Google is the third most common use of the Internet, after email and product research [1]. Given the widespread use of the Internet to research medical issues, it is prudent to understand the variability of information online. Due to a lack of sufficient online health-content regulation consumers are at special risk for viewing one of the 30 million websites lacking constant peer review [2]. For example, research showed that only nine out of 41 surveyed websites provided correct instructions regarding temperature taking in children [3]. These sites can be both misleading and dangerous. If healthcare workers become more knowledgeable about information readily available to and used by their consumers, they can be better prepared to educate and inform the public with appropriate and accurate information.

A search on the key term "concussion" on Google, results in 18,500,000 hits. There is an overwhelming amount of information available and yet, the concussion is still sort of an enigma. Concussions are frequently missed or misdiagnosed in all kinds of sports [4]. Despite the serious nature and frequent diagnosis; there are differing opinions on what constitutes a concussion. The Third International Conference on Concussion in Sport (CIS) defined concussion as a "complex pathophysiological process affecting the brain, induced by traumatic biomechanical force" [5]. To simplify the definition, it can be described as a head injury that results in altered state of mind. These definitions are pretty broad, as are the descriptions of the symptoms.

Signs and symptoms of concussions can range from mild headache, up to and including loss of consciousness and amnesia. Following a traumatic injury, onset of symptoms can be fairly quick within seconds to minutes, and include impaired attention, vacant stare, and inability to focus [6]. Traumatic injuries to the brain occur frequently in contact sports such as football, hockey and even soccer. The CDC estimates that the incidence of concussions range as high as 3.8 million per year translating into an average rate of about 10% of athletes sustaining a concussion during any season [7]. With the high prevalence of concussions, it is particularly important to recognize them in young athletes because recovery from concussion takes longer in children than it does in college/adult athletes [4]. Coaches, parents and sports authorities should be cognizant the signs and symptoms of concussions as well as the appropriate time to seek medical attention. A history of multiple concussions requires a more detailed evaluation before returning to physical activity.

2. Methods, Results

Methods. A data collection form was created based on the Consensus Statement on Concussion in Sports guidelines and recommendations. Contained within the template is the search engine ranking (1-10), definition, symptoms, seek physician

care, return to play (RTP). The search engine was "Google" since it is the most popular search engine on the World Wide Web (8). The key term entered into the search bar was "concussion" then; the top ten non media websites were analyzed on the amount of information within the content. Each website was individually evaluated by two independent data collectors on the same day. After all ten website were evaluated; the data collectors joined together and reviewed the results and compared data for accuracy and human error.

Results. he results are ranked are in order from top of the page to bottom based on December 19, 2011 Google search: 1) After the Injury; 2) PubMed Health ; 3) WebMD; 4) Wikipedia; 5) Mayo Clinic; 6) eMedicine Health; 7) CDC; 8) MedicineNet; 9) NY Times; and 10) Teens Health . The sixth website was media related so it was excluded from evaluation. Nine websites contained all the information sought. The only exception was 8) MedicineNet, which did not contain information on when to seek medical care or RTP recommendations for athletes or parents. Regarding the use of ibuprofen, aspirin or naproxen for home treatment options, four websites stated directly against their use, while two sites stated it was appropriate. Nine sites gave information on when to seek medical care, two stated directly that anybody who sustains a concussion needs to be evaluated and five sites listed certain symptoms that require medical attention. Eight websites stated directly that an athlete needs to be evaluated by a healthcare professional after receiving a sports related concussion. Three websites suggested that a child or athlete not RTP the same day after receiving the injury.

3. Conclusion

There's a lot of medical misinformation on the World Wide Web [9], and the number of sites is assumedly rising with the popularity of the internet. The abundance of inaccurate and even potentially life threatening content readily accessible to anyone with a modem and an internet browser supports the validity of concern [10]. A comprehensive review found that over two-thirds (70%) of studies of the quality of online health information reported problems in the quality of information located on the Internet [11]. The concussion analysis confirms these statements with the amount of wide variance and interpretation issues with regard to healthcare topics. Concussion symptoms and treatment can be an overwhelming and life threatening issue that should only be handled by a properly trained individual.

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