

Accuracy and Completeness of Drug Information Collected from Google Snippets

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Introduction:

In 2014, Google introduced a feature known as the Snippet. This feature presented users with a small box of text intended to answer questions more quickly with information gathered from frequently visited websites. Due to increased internet usage as a means for patients to gather medical information as well as answers to various drug related questions, verifying the integrity of information presented within these Snippets is paramount to providing safe and efficient patient care. The purpose of this study was to compare both the accuracy and completeness of Google Snippets when compared to FDA regulated patient medication guides.

Methods:

From the Clinical Drugstats Database Medical Expenditure Panel Survey list of most common outpatient medications, 18 medications were selected. For each medication, FDA regulated medication guides were collected, and a series of 6 questions were formulated based on necessary information included in those medication guides. 8 of the selected medications were compared to analyze inter-rater reliability, and the remaining 10 were used for the official comparison.

For each question, Google was consulted, and the answer provided was compared to the FDA medication guide. A non-validated scoring system was utilized to quantify the differences in the medication information. The correctness of information provided by the Snippet was considered the "accuracy," while the number of facts provided or omitted was considered the "completeness."

Results:

Overall the total scores were very low for Google Snippets in both accuracy and completeness, with a total 42.8% of the total possible points given to the Google Snippets for all the information given. Both accuracy and completeness were highest when describing the ingredient lists of the medications and scored the lowest when answering how to take medications. Accuracy scored higher than completeness across all questions. A trend exists across all data that suggests accuracy and completeness are correlated, as both scores increase or decrease concurrently between questions.

A total of 12 questions were omitted due to either the lack of a Google Snippet or no medication guide information available for comparison. Specifically, 3 questions had no Snippet provided, 8 questions had no medication guide information, and 1 question had neither a Snippet nor medication guide information available.

Conclusion:

The study identifies a significant flaw in the utilization of Google Snippets as a means of health education. The study suggests there are omissions of information that the FDA has determined necessary for patient health when using these medications. The likely cause of inconsistencies is the plethora of websites Google has available when searching for information, and the lack of regulation controlling these websites. These issues with patient self-education, especially in situations with no healthcare professional present, increase the risk of undue patient harm and adherence issues.