

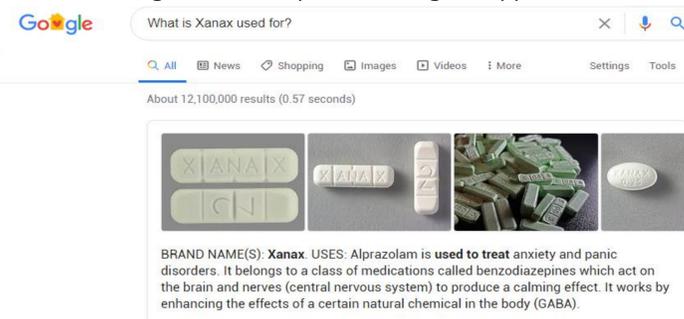
THE ACCURACY AND COMPLETENESS OF DRUG INFORMATION COLLECTED FROM GOOGLE SNIPPETS

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BACKGROUND

- The internet has become a widely utilized health and drug information resource due to the availability and ease of access.
- In 2014, Google introduced the “Snippet Block” or Google Snippets, a question answering algorithm. The program would search and use available websites to find a quick answer to queries entered in the search bar
- The primary focus of this study was to evaluate both the accuracy and completeness of information presented by Google Snippets when compared to information provided by the FDA medication guides.

Figure 1. Example of a Google Snippet



METHODS

- Ten common prescription medications were selected that had a corresponding FDA medication guide available.
- Drug information questions were entered into Google, and the resulting Snippet was compared to information in the FDA medication guide.
- The correctness of the information contained in the Snippet was considered the “Accuracy,” while the total included content was considered the “Completeness.”
- A non-validated scoring system was utilized by two drug-information pharmacists to quantify the differences in both accuracy and completeness.
- Scores were assigned and used to calculate mean scores for individual questions as well as composite totals.

RESULTS

Figure 2. Questions Entered into Google

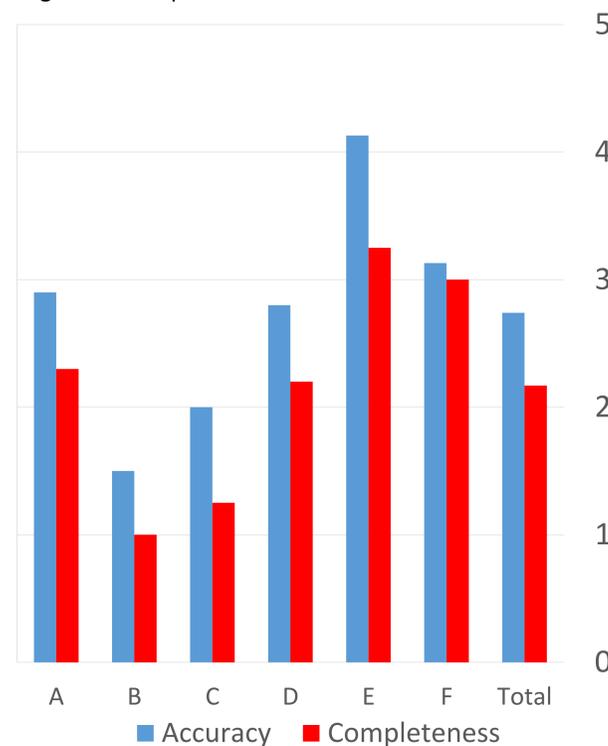
- A. What is <drug> used for?
- B. How do I take <drug>?
- C. What are the possible side effects of <drug>?
- D. What should I avoid while taking <drug>?
- E. What are the ingredients of <drug>?
- F. How do I store <drug>?

Figure 3. Explanation of Scoring System

Score	Definition
1	<25% of information is accurate/complete
2	26-50% of information is accurate/complete
3	51-75% of information is accurate/complete
4	76-99% of information is accurate/complete
5	100% of information is accurate/complete

- Due to a lack of Snippet provided or lack of corresponding med guide information, 12 questions were omitted from the analysis.
- The Snippets had a possible composite score of 470 points, with 235 points possible in each accuracy and completeness. The actual composite score was 231 (μ 2.46), with 129 points in accuracy (μ 2.74) and 102 points in completeness (μ 2.17)
- Both accuracy and completeness scored the highest when observing “What are the ingredients of <drug>?” (μ 3.69). Both scored the lowest when observing “How do I take <drug>?” (μ 1.25). Accuracy consistently scored higher than completeness.

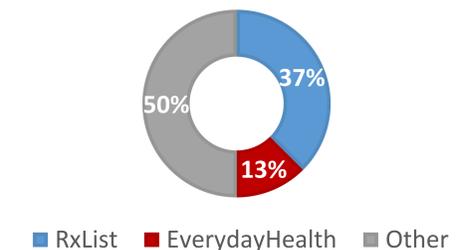
Figure 4. Comparisons of Scores Between Questions



DISCUSSION

- Incorrect or omitted information are both potentially dangerous for patients, especially with medications that have associated medication guides.
- The discrepancies in the information provided are likely attributed to the variety of information sources Google uses to generate the Snippet.
- Of the 56 collected Snippets, 21 cited Rxlist.com as the source of information, amounting to 37.5% of the Snippets. 7 Snippets cited Everydayhealth.com or 12.5% of the total. 12 Different websites provided the remaining 28 Snippets.

Figure 5. Distribution of Accessed Websites



CONCLUSIONS

- While Google Snippets may be an easy and convenient way for consumers to access health and drug information, this study suggests that the information provided is insufficient to guarantee proper use of prescription medications.
- Due to the inconsistency of information deemed necessary for proper treatment and patient safety, consumers should consult their healthcare providers with any drug questions to receive the correct information.

REFERENCES

- Google. Featured Snippets in Search. Google Support Website. <https://support.google.com/webmasters/answer/6229325?hl=en>. Accessed on September 23, 2018.
- U.S. Food and Drug Administration. (2018, August 08). Drug Safety and Availability - Medication Guides. Retrieved November 27, 2018, from <https://www.fda.gov/Drugs/DrugSafety/ucm085729.htm>