

# Over-The-Counter Label Literacy in College Students The University of Findlay College of Pharmacy

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## BACKGROUND

It is pivotal for school aged children, college students, as well as adults to properly be able to read an over-the-counter (OTC) medication label so that they can properly take the desired medication appropriately. According to Abel et al. adolescents in the United States increase self-administration of OTC medications as they age. With the increasing usage of OTC medications there are potential dangers involved. These dangers include overdosing on a particular medication due to not knowing how to properly take the desired medication as well as not properly storing the OTC medications properly which as a result could lead to toddlers getting a hold of the OTC medications. The Center for Disease Control (CDC) states that an estimated 58,546 Emergency Room visits were caused by adolescents self-administering OTC medications and 33.9% of these visits resulted from an overdose of OTC medications. If young adults become somewhat familiar with brand/generic names as well as how to take common OTC medications, the chances of an individual overdosing will decrease exponentially. Hariprasad Trivedi et. al., notes that it is important to recognize that nonprescription medications are relatively safe but not risk free. The risk comes when children start self-medicating themselves without first speaking to an adult. Research suggests that young adults do not know how to read medication labels appropriately and this as a result could lead to bad outcomes.

On the other hand, adults are also responsible for taking medications for self-treatable conditions. According to the Journal of American College Health, "Medication use is a fundamental issue among college students. Colleges and universities have been identified as important settings for health promotion and education by the CDC and Prevention". Often adults do not know how to properly take over the counter medications as well. If adults are taught how to take these medications properly, the risk of adverse effects would decrease exponentially.

## OBJECTIVES

The purpose of this research project is to analyze the ability of college aged students at the University of Findlay to read an OTC medication label appropriately. Studies have shown that the OTC Food & Drug Administration (FDA) labeling design must be revised to improve literacy in regards to the OTC label. After completion of this project, this research will open up the opportunity for pharmacy students and pharmacists to educate their patients on the importance of taking medications properly so that there are no unnecessary deaths or hospitalizations.

We hypothesize that college students will have a higher OTC label literacy than the previous published data that includes middle and high school students.

## METHODS

- Send electronic surveys to the professors to share with their students. The survey questions are listed in the Results section.
- Once completed electronic data will be saved in Google Drive.
- Once the data is gathered, we will begin analyzing the data.
- Will utilize data from analysis to determine next steps in further research and if information should be shared with the college, manufacturers, or the FDA.

### Inclusion Criteria:

- University of Findlay Student
- 18 years old or older
- Younger than 30 years old

### Exclusion Criteria:

- Under the age of 18
- Older than the age of 30
- Not enrolled at University of Findlay

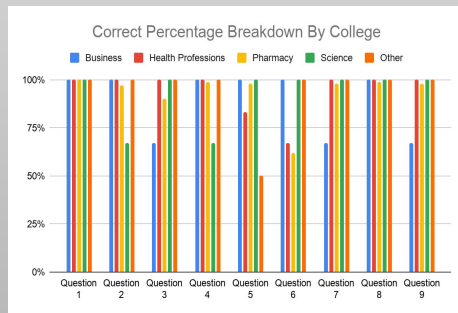
## RESULTS

### Questions:

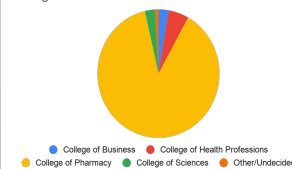
- Advil Question 1: What age is the product approved for?
- Advil Question 2: What is the maximum amount of capsules that you are supposed to consume in a single dose?
- Advil Question 3: What is a side effect that you may experience?
- Cold Flu and Sore throat Question 1: What age indication is this product approved for?
- Cold Flu and Sore throat Question 2: What is the maximum amount of capsules allowed in one day?
- Cold Flu and Sore throat Question 3: Products also containing what medication
- Claritin Question 1: What age indication is this product approved for?
- Claritin Question 2: How many tablets are this supposed to take in a single dose?
- Claritin Question 3: What is this product used for?

113 participants were also asked how often they take OTC products with 48.6% saying they took OTC medications less once a week, 20.7% 1-2 times a week, 9% 3-4 times a week, 2.7% 5-6 times a week, & 18.9% more than 6 times a week..

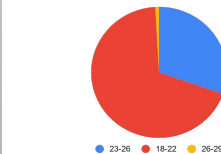
Of note, question 6 was considered differently in the data analysis due to some ambiguity with the question, potentially skewing results.



### College Breakdown



### Age Breakdown



## CONCLUSIONS & DISCUSSION

Our preliminary data shows that college-aged students are able to understand and interpret OTC labels. Our hypothesis has been proven true because our results showed that college-aged adults have a higher OTC label literacy than younger students when we compare our data to similar data from prior studies published. Previous studies of middle and high school students had significantly lower scores when asked questions based on OTC literacy. The questions were not the exact same as the previous studies, therefore the level of difficulty could have been different when comparing them to our results. Based on our data we do not believe that OTC labels need to be changed for this age group as the results show that the majority of participants got most of the questions correct.

We did have some bias in our study due to a majority of participants being from the College of Pharmacy, which can skew the results because of their knowledge of the medications. Also, after some feedback from the subjects, it was noted that Question #6 was difficult to interpret, which may have led to the decreased literacy on that question. Overall, the College of Pharmacy and Health Professions were nearly 100% correct in their answers. While the College of Business had the lowest rate of accuracy. It is difficult to determine if all college-aged adults are competent in OTC literacy due to having a large majority of participants being in healthcare majors. Because of this we believe that the study would need to be extended to different colleges and a larger variety of majors to be able to fully determine how well college-aged students interpret OTC labels.

## REFERENCES

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- Trivedi H, Trivedi A, Hannan MF. Readability and comprehensibility of over-the-counter medication labels. Renal Failure. 2014;Jan20;36(3):473-7.
- Bhansali, A. H., Sangani, D. S., Mhatre, S. K., & Sangsiry, S. S. (2018). Effect of warning placement on the information processing of college students reading an OTC drug facts panel. Journal of American College Health, 66(4), 237-245. doi:10.1080/07448481.2018.1431891