



Evaluation of a student assignment on artificial intelligence and its utility in answering drug information questions

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Introduction

- ❖ Data are limited when evaluating artificial intelligence within pharmacy curriculum
- ❖ Most studies have indicated AI has many inaccuracies when answering drug information questions involving enhanced prompts or patient cases
- ❖ Very little is published on how to incorporate AI into Pharmacy courses

Course Description

- ❖ Raabe College of Pharmacy is a 0-6 program
- ❖ Curriculum consists of a Foundations in Pharmacy Practice (FiPP) series of course starting in 1st year to the 3rd year
- ❖ FiPP 3 is a 2nd year course with emphasis on pharmaceutical calculations & drug information (DI) The course requires 2 different DI assignments involving tertiary and secondary resources
- ❖ The course requires a DI project related to health information and communication to health professionals and the consumer (3rd assignment)
- ❖ With the explosion of artificial intelligence (AI), there has been a concern about misinformation and disinformation and if students can discern issues

Objective

To evaluate the use of an AI assignment to instruct students on the accuracy of ChatGPT to answer consumer DI questions within a Foundations in Pharmacy Practice course



Methods

- ❖ Instructor posed 76 different DI consumer-based unique questions to students
- ❖ Students were tasked with asking ChatGPT for a response and 3 references (responses related to OTC/herbal questions)
- ❖ Instructors developed a 100 point worksheet to go with the ChatGPT response for the assignment
- ❖ Descriptive data were collected from worksheets

Example Questions

Can bilberry improve eyesight?

Can candesartan be used to treat migraines?

Can carbamazepine be bad for my bones?

Can garlic help treat high blood pressure?

Can chromium supplementation help diabetes?

Can ciprofloxacin interact with caffeine that is in my coffee?

Can empagliflozin help your kidneys if you have diabetes?

Worksheet

FIPP3 Drug Information Assignment Template (100 Points)

Name: _____

Drug Information Question Assigned: _____

Question Category (5 Points): _____

On a scale of 1 to 5 what score would you give the ChatGPT answer? _____ (5 points)

1 poor 2 fair 3 average 4 good 5 excellent

How complete was the information provided by ChatGPT? Did it completely answer the question? What information was missing? (10 points)

Were you able to locate the actual references cited by ChatGPT (full article or website)? If no, why not? (10 points)

Find a Tertiary Resource that helps answer this question. What resource did you use and provide a brief overview of the information provided? (10 points)

Using Academic Search Complete, search for a primary study to support the answer to the question. (5 points)

What information did you find in the article that was helpful in answering your question? (10 points)

Was this a source referenced by ChatGPT? (5 points)

Provide a correct NLM citation for the primary reference you found through Academic Search Complete. (10 points)

Write a professionally written response to Consumer Question (15 points)

Provide your Assessment of Information found in ChatGPT compared to other tertiary and primary sources that you researched. (15 points)

Results

On a Likert scale from 1 being poor to 5 being excellent, the median score provided by the students was 3 with a mean score of **2.73**

Only **4%** were able to find the references provided by ChatGPT to answer the question

100% of the students were able to find both a primary and tertiary source to answer the DI question provided to ChatGPT

0% of the students were comfortable using the ChatGPT answer in totality to provide an answer to the original question

100% either rewrote or modified the answer

20% indicated they felt the ChatGPT answer was accurate with **28%** indicating it was correct, but incomplete

52% of the students ranked the ChatGPT answer as misleading or incorrect

Discussion

Students needed to apply their knowledge on primary, secondary, and tertiary resources from the previous 2 DI assignments

Limitations include students only had a self-care course and Likert scale was subjective assessment

Conclusion

The ChatGPT exercise was a novel approach to informing students about the use of artificial intelligence in answering consumer drug information questions and demonstrated the challenges of AI