Evaluating the perception of Artificial Intelligence among the PharmD students in West Virginia University

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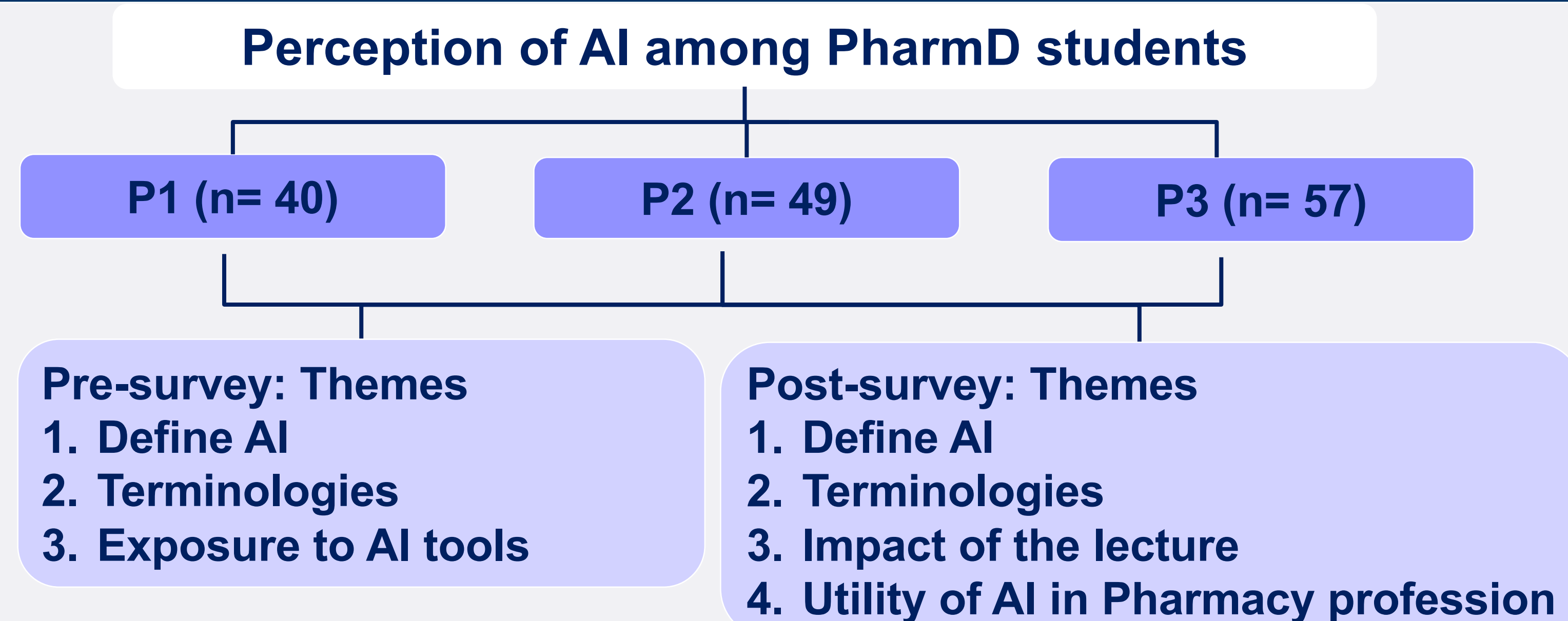
INTRODUCTION

- Pharmacists' ability to identify and facilitate Digital Health tools and diagnostics, interpret data for patients, and "prescribe digital therapeutics" has been emphasized.[1]

- The International Pharmaceutical Federation has issued an online "Train-the-Trainer" digital health curriculum series that describe several innovative Digital Health didactic activities[2].

- With rapidly evolving healthcare system incorporating the use Artificial Intelligence (AI), there is a current need on how to integrate AI in Pharmacy education and and stay up to date with the use of these newer technologies.

OBJECTIVE

- The objective of this study is to design and offer AI educational session integrated in the curriculum to PharmD students at our institution, and gain students' perception on AI.

METHODS

- Related AI 1h-lectures to the courses of "Drug Delivery", "Pharmaceutical Research", and "Special Populations" were offered to P1, P2, and P3 students, respectively.

- An AI expert developed and offered an appropriate lecture focused on AI and its clinical applications.

- Anonymous pre- post- survey with fill the blank, yes/no, multiple-choice questions was offered. (IRB approved).

- Data was analyzed using the natural language processing (NLP) tools using R programming language and sentiment analysis to understand the sentiments of the asked questions.

- For the word cloud we selected only top words for the survey questions.

Perception of AI among PharmD students

P1 (n= 40) — P2 (n= 49) — P3 (n= 57)

Pre-survey: Themes
1. Define AI
2. Terminologies
3. Exposure to AI tools

Post-survey: Themes
1. Define AI
2. Terminologies
3. Impact of the lecture
4. Utility of AI in Pharmacy profession

RESULTS

- A total of 147 students were exposed to the AI sessions, and 34 (85%), 41 (82%) and 31 (54%) of P1, P2, and P3 students, respectively, participated in the pre-survey, while 33 (79%), 15 (26%) and 26 (52%) completed the post-survey.

- In the final analysis we included the matched participants in each groups and that consisted 33, 25, and 14 students from P1, P2, and P3 groups, respectively.
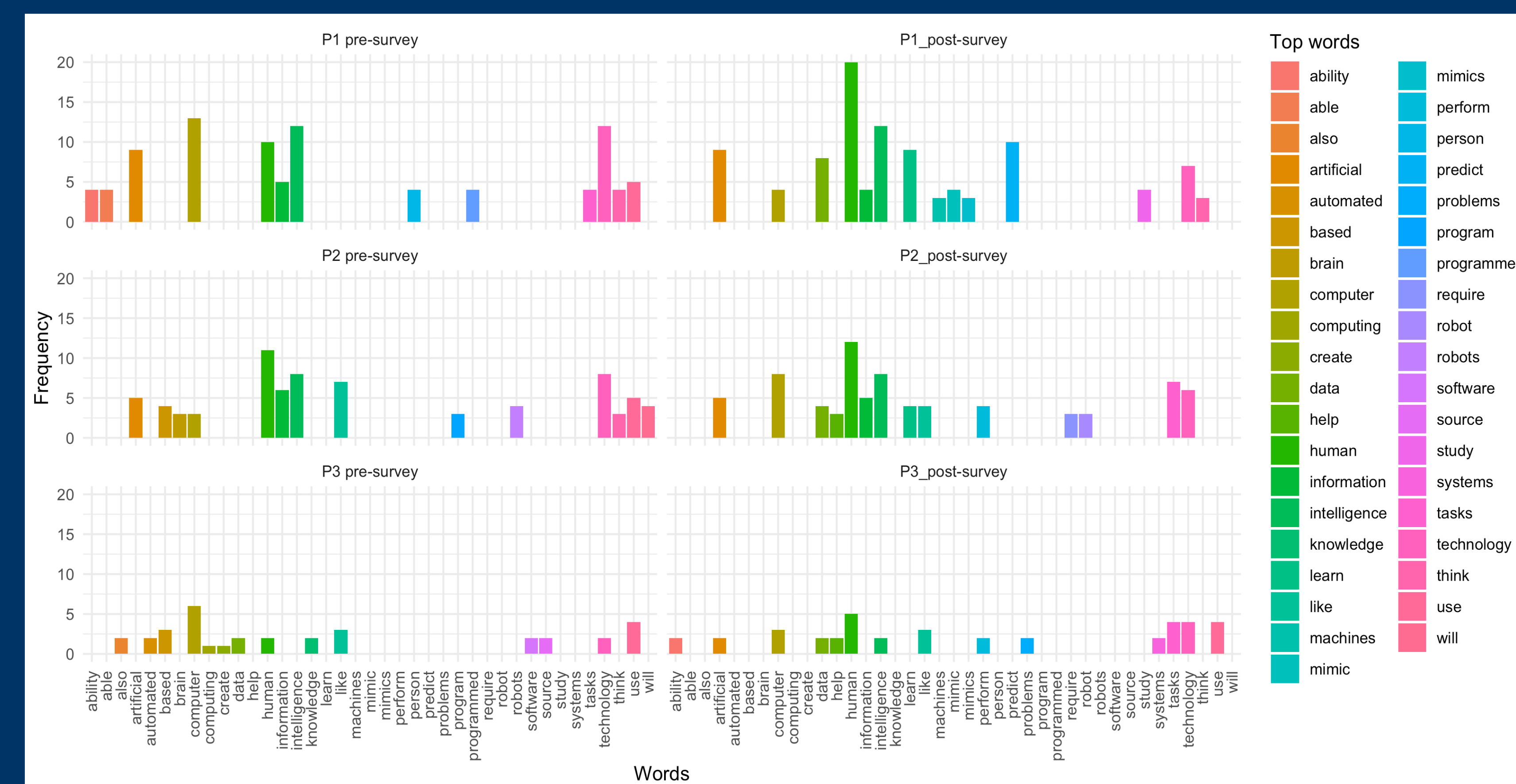

Figure 1. Students' responses on defining AI in pre- and post-survey for the 3 cohorts. When comparing pre- and post- results some words like "human" or "prediction" are more commonly used after the session.
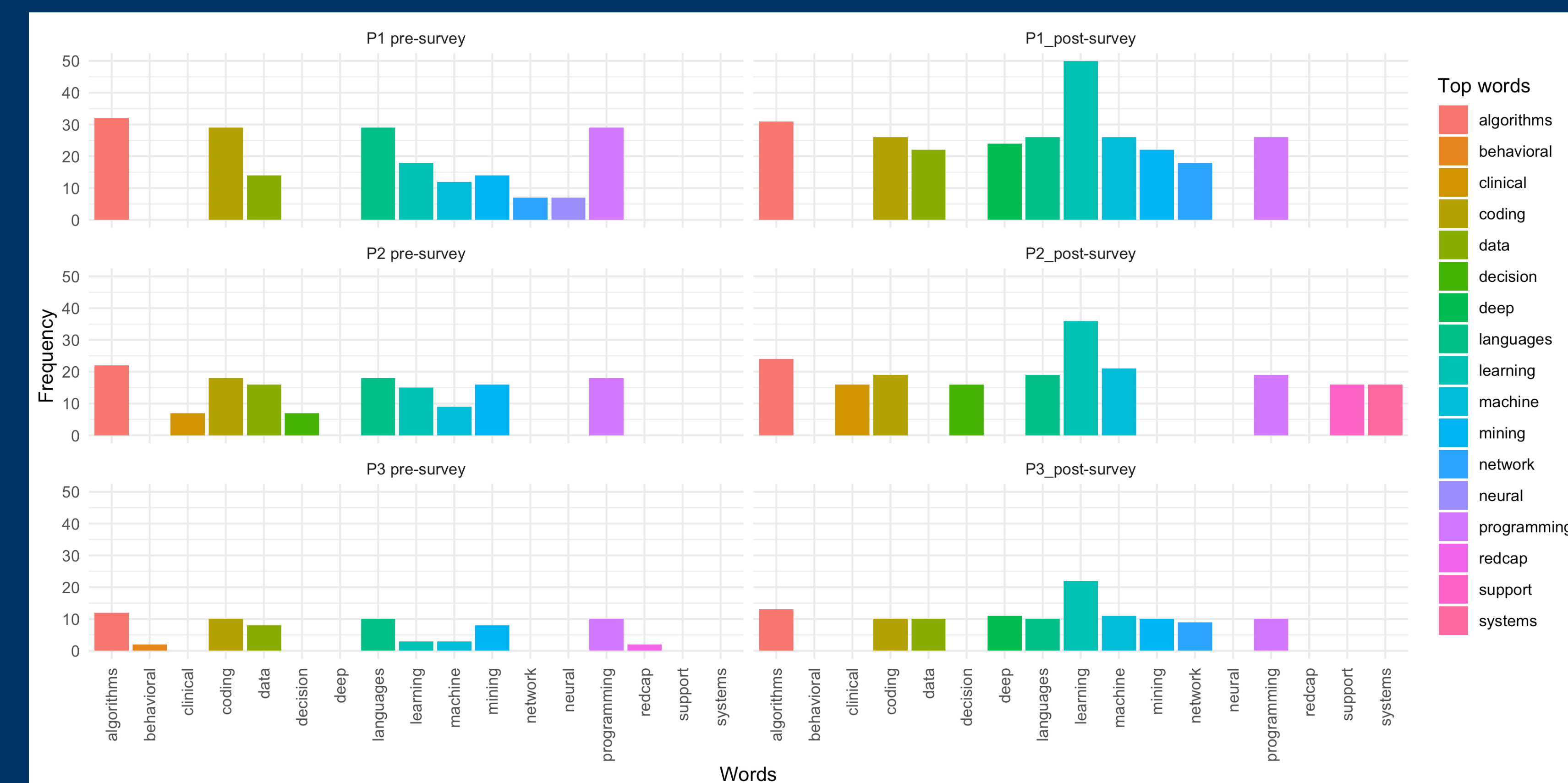

Figure 2. Students' responses identifying AI nomenclature. Students recognize the word "learning" for AI as key word in the post-survey responses.
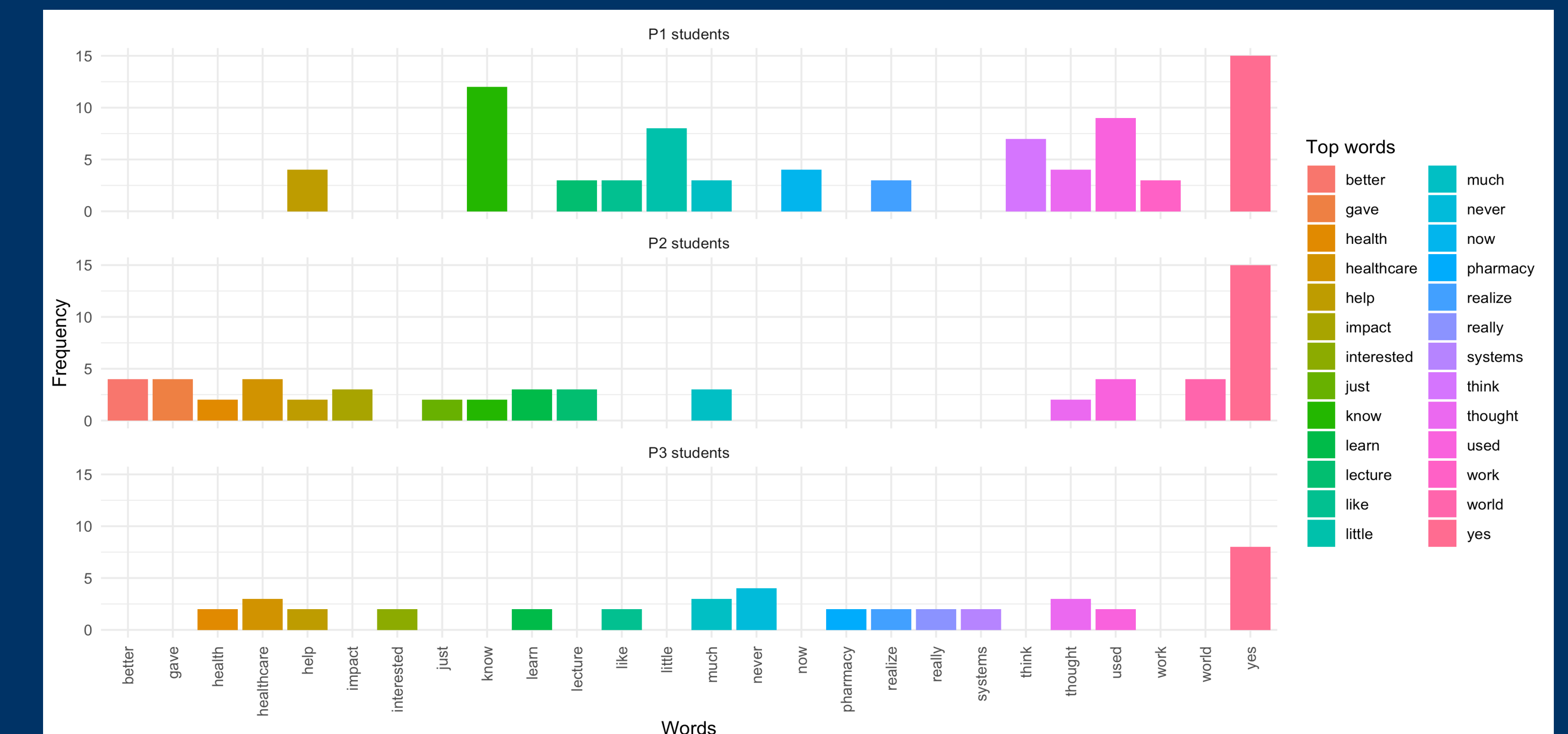
RESULTS

Figure 3. Impact of the AI session in students' perception of AI. Students/ open ended questions revealed their acceptance and interest for AI.
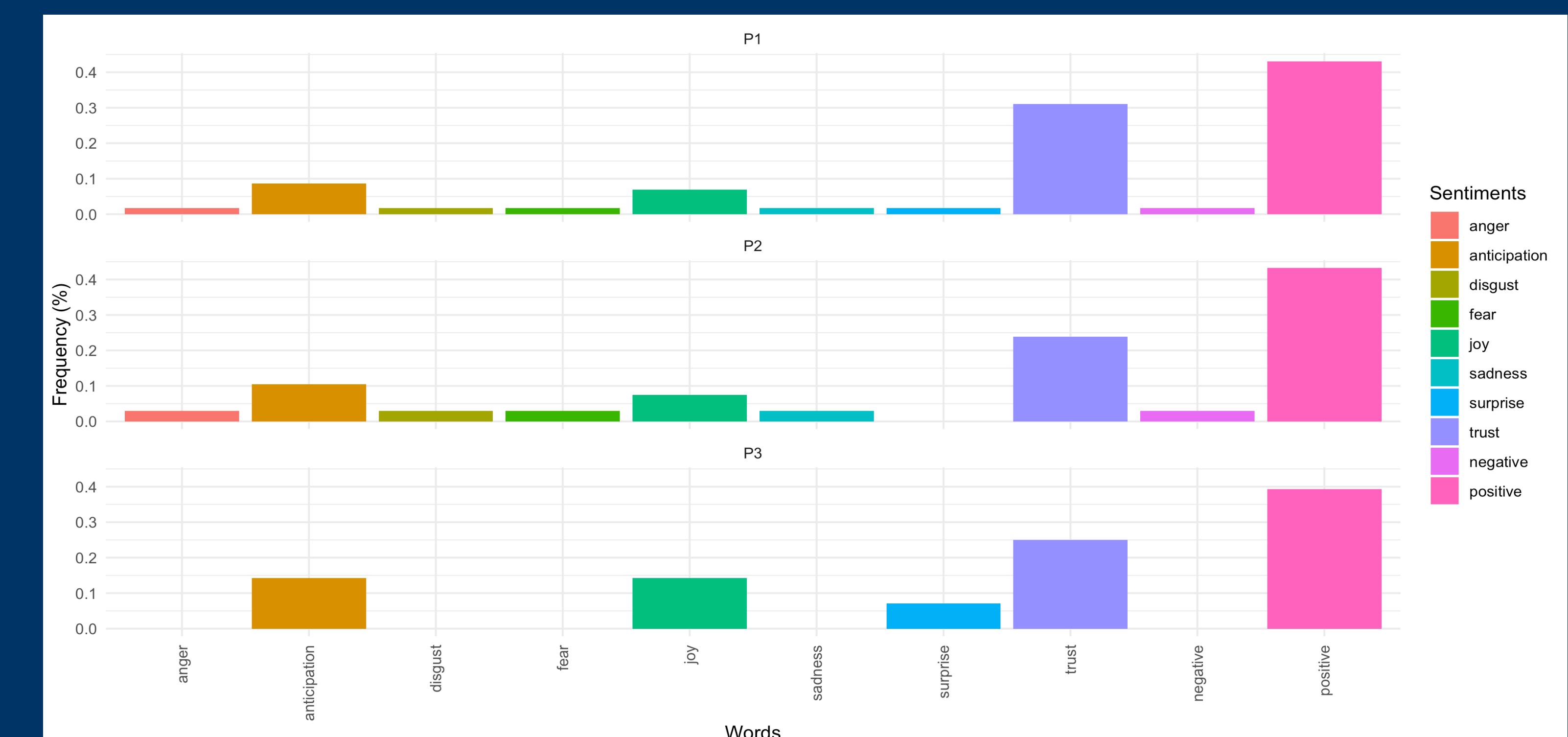

Figure 4. Sentiment analysis on what would be a role a pharmacist could have to build, validate, and communicate a new AI tool. Open-ended question filled by students and analyzed by R package (syuzhet) revealed positive and trust perception.

CONCLUSION AND IMPLICATIONS

A novel NLP analysis was conducted to understand the AI and its usability in pharmacy training and education. The results show the important AI terminologies and sentiments expressed by the P1, P2, and P3 students which reiterates the need of integrating AI methods in pharmacy education.

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