

Introduction

- Patients with PAD have poor understanding of their diagnosis
- The role of generative AI chatbots in improving PAD patient education is unknown
- **Objective: Compare a customized AI chatbot (VERA) to publicly available AI chatbots using validated readability and usability metrics and assessments of accuracy and comprehensiveness.**

Methods

- We created a generative AI chatbot called VERA and compared it to ChatGPT-5, Gemini 2.5 Flash, and Claude Sonnet 4.5.
- Each chatbot answered 10 prompts consisting of PAD FAQs.
- Responses were graded using 5 validated readability metrics and patient education quality (PEMAT) criteria
- Accuracy and comprehensiveness were graded by PAD experts (n=7)

Figure 1. Readability scores by chatbot

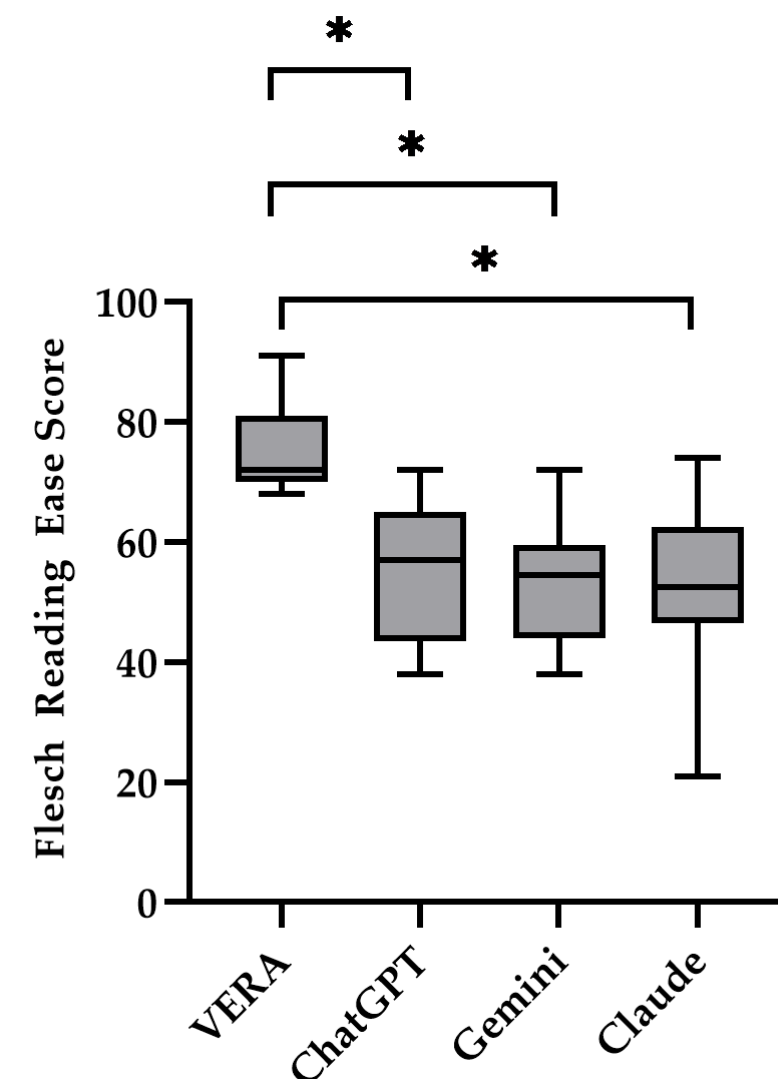


Table 1. Accuracy score analysis with pooled prompts.

Chatbot	Pooled across prompts	Holm-adjusted p value		
		ChatGPT	Gemini	Claude
VERA	0.02*	0.06	0.2	1.0
ChatGPT			0.5	0.1
Gemini				0.3
Claude				

*, indicates p value < 0.05

- VERA provided significantly more readable text (median grade level 6.6) than the other chatbots
- Accuracy scores were high and similar for all chatbots
- VERA was less comprehensive, reflecting intentional simplification for patient-centered communication

Results

Figure 2. Median grade level by chatbot

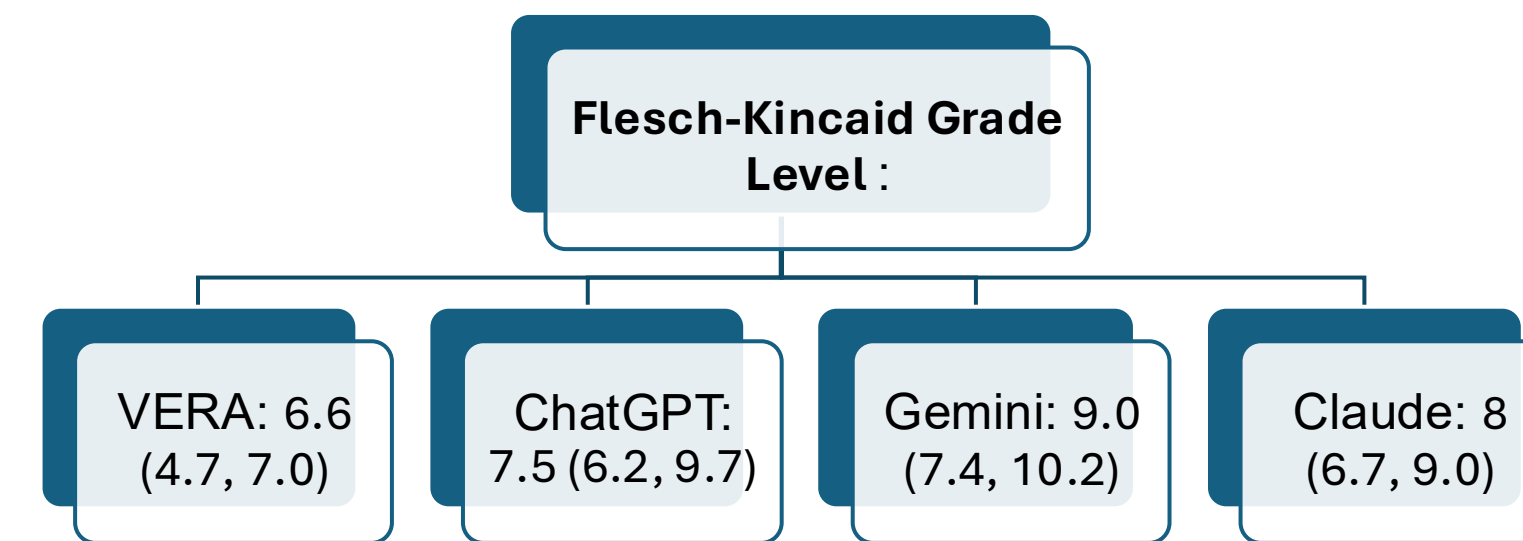


Table 2. PEMAT understandability and actionability scores.

Chatbot	Understandability Scores		Actionability Scores		Holm-adjusted p value
	Mean (std. dev.) %	Median %	Mean (std. dev.) %	Median %	
VERA	100 (0)	100	35 (26.9)	50	Not significant
ChatGPT	100 (0)	100	20 (28.4)	0	
Gemini	100 (0)	100	45.0 (19.7)	50	
Claude	100 (0)	100	40 (24.2)	50	

Conclusions

- VERA generated significantly more accessible PAD educational content than publicly available AI chatbots while maintaining comparable accuracy. Customized disease-specific AI chatbots may better address patient education needs for PAD populations with variable health literacy.

Future directions

- Future work will assess impact on knowledge retention, improve actionability of chatbot responses, and integrate multimodal educational tools (voice + images)