A COMPARISON OF THE ARTIFICIAL INTELLIGENCE PROGRAMS CHATGPT AND GEMINI IN READABILITY AND IMAGE ACCURACY IN EXPLAINING KASABACH-MERRITT PHENOMENON TO CHILDREN

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Objectives

This study aimed to compare the readability and image generation capabilities of Gemini and ChatGPT in explaining Kasabach-Merritt phenomenon (KMP) to children.

Methods

ChatGPT and Gemini were tasked with creating text descriptions and visual illustrations of KMP in children. Readability was evaluated based on the ease and suitability for a younger audience. Readability was also assessed by number of sentences, words per sentence, characters per sentence, percentage of difficult words, Flesch Reading Ease (FRE), and the Flesch-Kincaid Grade Level (FKGL). The FRE score ranges from 0 (unreadable) to 100 (extremely easy to read).1 The FKGL provides a score corresponding to a US education grade level, a lower score means a text is easier to read.1 Image quality was assessed by accuracy, and educational value, particularly in depicting skin symptoms unique to KMP.

References

Jindal P, MacDermid J. Assessing reading levels of health information: uses and limitations of flesch formula. Educ Health. 2017;30(1):84. doi:10.4103/1357-6283.210517

Introduction

Effectively communicating complex medical information to young patients is essential, especially for rare conditions like Kasabach-Merritt phenomenon (KMP), which can cause significant health challenges. With recent advancements, AI tools like ChatGPT and Gemini can generate child-friendly explanations and visualizations, offering new opportunities for pediatric education. This study compares ChatGPT and Gemini's capabilities in creating readable, accurate, and visually informative content on KMP for children. Using readability metrics like the Flesch Reading Ease (FRE) and Flesch-Kincaid Grade Level (FKGL) and assessing the accuracy of generated images, we aim to identify which tool best supports pediatric understanding of complex conditions, potentially enhancing the patient experience in clinical settings.[1]

Gemini
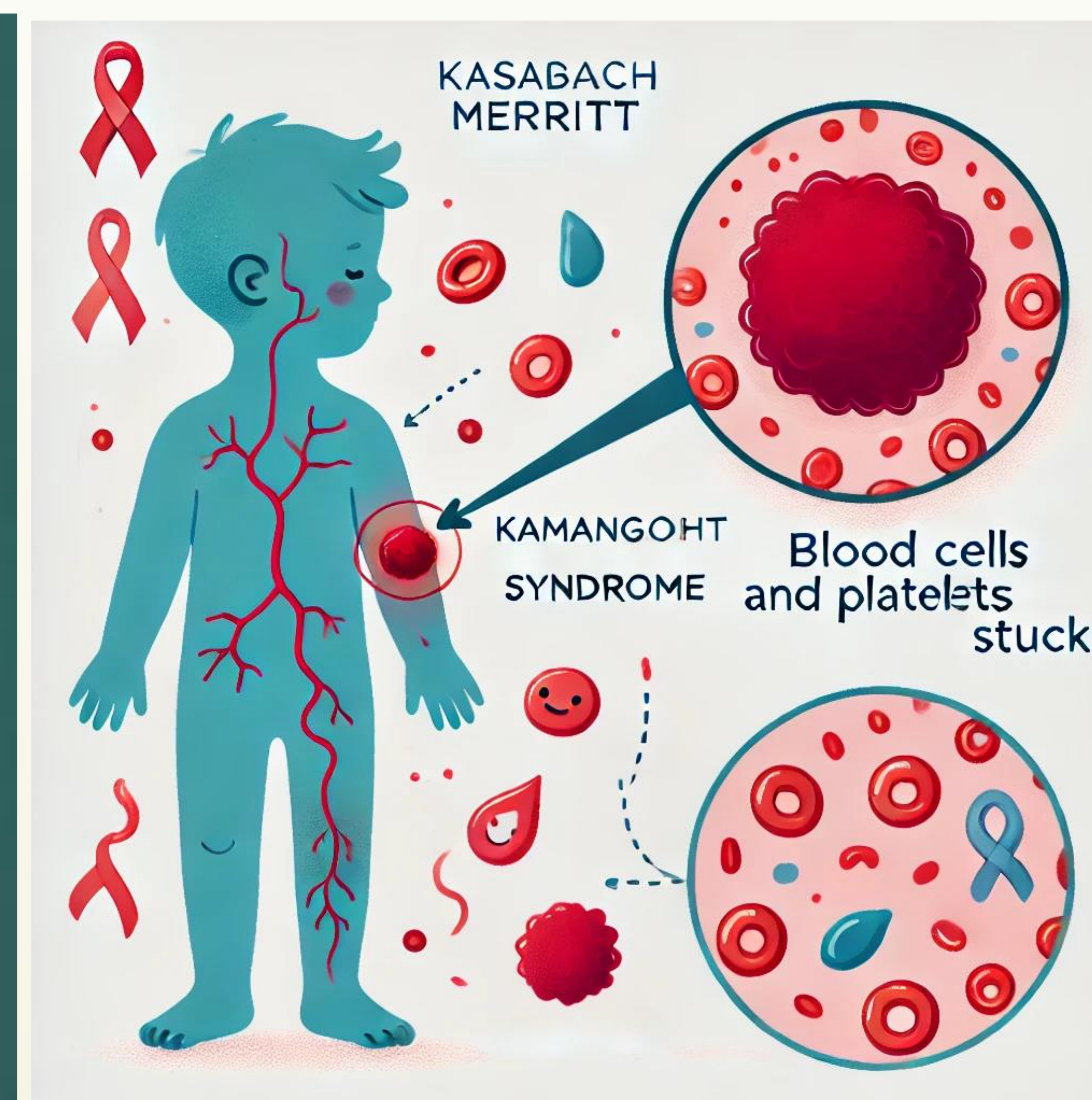
ChatGPT

Results

ChatGPT's and Gemini's text demonstrated equal readability by simplifying complex medical concepts into child-friendly language. ChatGPT's response earned a FRE of 69.31 while Gemini earned a 69.93, and a FKGL of 7.38 while Gemini earned a 7.68. The ChatGPT-generated images better depicted KMP's pathophysiology and presentations. Gemini's image lacked accuracy and resembled a generic cartoon.

Conclusion

ChatGPT and Gemini had equal readability for educational materials on KMP for the pediatric population but ChatGPT generated a superior image to Gemini. ChatGPT may be better suited to creating medical illustrations and have greater potential for use in demonstrating complex syndromes to children, either in the hospital setting or in the setting of a multidisciplinary vascular clinic.