



**Herbert Wertheim
College of Medicine**

ChatGPT as a Patient Educator: Quality and Guideline Adherence in Lifestyle Education for Adolescents with Prediabetes and Diabetes

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Introduction

- Artificial Intelligence (AI), including large language models (LLM) are rapidly transforming the landscape of modern medicine. One promising application is in the area of lifestyle medicine.
- AI and LLMs may help healthcare professionals to efficiently translate clinical goals into actionable, patient-centered lifestyle recommendations.
- In a time-constrained clinical visit, LLMs like ChatGPT could assist clinicians by generating tailored lifestyle plans, enhancing patient communication, and providing real-time decision support.

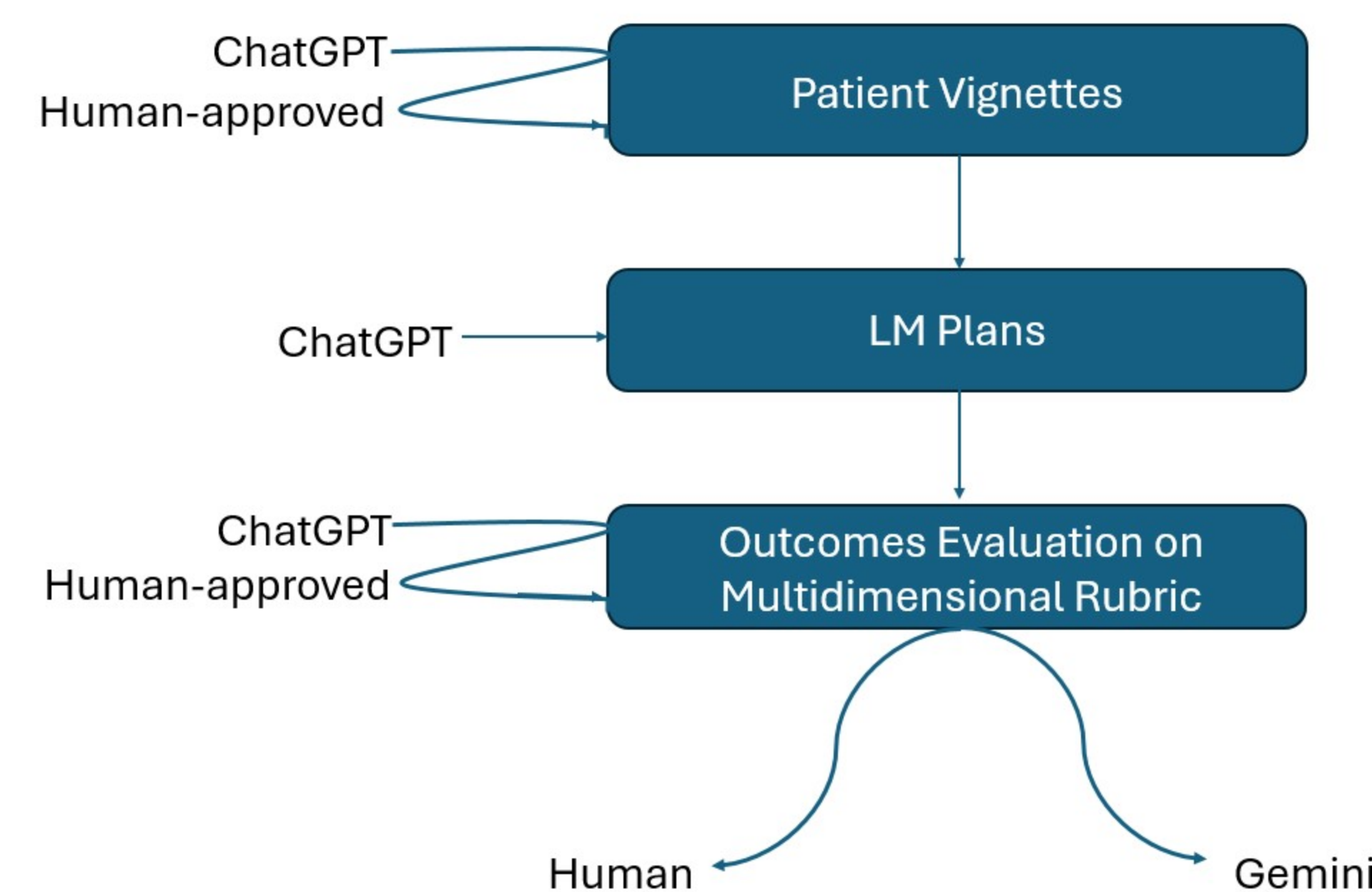
Objective

This study aims to evaluate the efficacy of ChatGPT in generating personalized lifestyle interventions, specifically focusing on nutrition and physical activity, to support health behavior change and aid physicians in clinical decision-making.

Methods

- Patient vignettes → Lifestyle plans → Outcomes evaluation
- Hybrid approach: ChatGPT (3.5) with Human adjustments
- We prompted ChatGPT to generate 10 patient vignettes representing individuals from diverse cultural backgrounds, which we revised as needed.
- We prompted ChatGPT to provide, for each scenario:
 - 3 culturally-appropriate meal suggestions and 2 snack alternatives, including healthier ingredient substitutions
 - 1 culturally-relevant at-home physical activity routine

Methods Continued

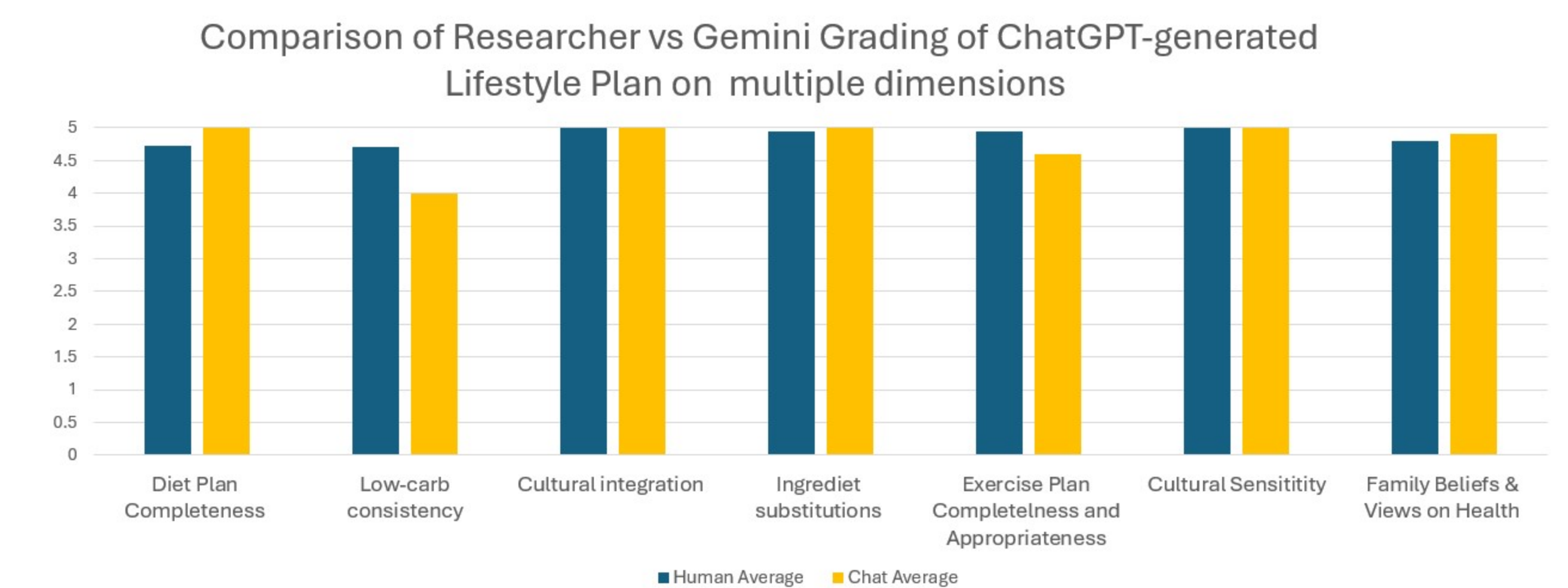


- We prompted ChatGPT to create an evaluation rubric based on the American Dietetic Association (ADA) guidelines for assessing the quality of lifestyle recommendations. We adjusted and finalized the rubric.
- Four independent researchers used the rubric to assess each intervention and we used the average grade for comparison.
- Used Gemini-2.5 Flash to grade ChatGPT's interventions using the same rubric
- Flesch-Kincaid Calculator determined ChatGPT's output readability level

Results

- Gemini's grading of ChatGPT's output was very similar to the average researcher's grading in all categories with the exception of low-carbohydrate consistency.
- The researchers failed to acknowledge the carbohydrates of healthier alternatives in the total carbohydrate count.
- Gemini's readability was a consistent 4 for all categories as there was no indication of structure of measurable, time-bound objectives.

Results continued



Conclusions

- Given a very specific and descriptive prompt based on the clinician's recommendation and patient's desired lifestyle modifications, LLMs such as ChatGPT can generate a guideline-aligned, personalized and culturally tailored lifestyle plan for meal modifications and exercises.
- Future studies are needed to explore safe, regulations-compliant and ethical implementation of LLMs as patient educators as valuable virtual assistants for clinicians in time constrained clinical practice.

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