The Battle of Voices: AI-Generated vs Human-Narrated Podcasts in Publications

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QR code to audio clips

Rubin, E.J., et al., "NEJM at ESC – Invasive versus Conservative Strategy for Older Patients with Myocardial Infarction" N Engl J Med 2024;391:e40. Link to podcast provided with permission. Copyright 2024 Massachusetts Medical Society.

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Conclusion and Application to Medical Communications

While the AI-generated podcast demonstrated a promising level of clarity and accuracy, the human-narrated content remained superior in terms of engagement and delivery. Results suggest that AI effectively produces coherent content yet lacks the conversational tone the human voice naturally provides.

Despite its limitations, when used appropriately, AI-generated content holds value in medical communications – particularly for rapid, scalable content creation.

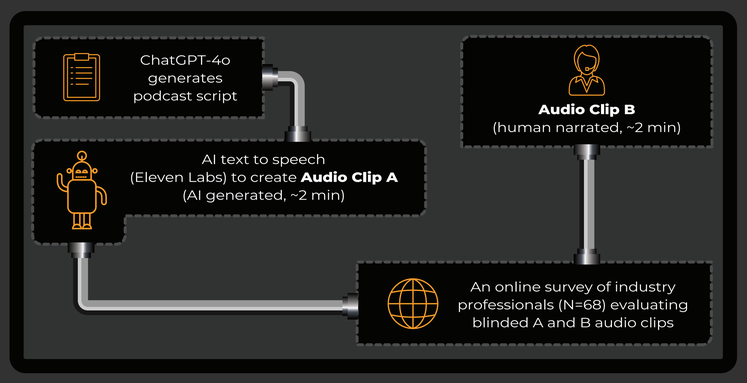
Background

Artificial intelligence (AI) is transforming content creation across industries, including medical communications.[1] With advancements in AI, automating podcast creation presents opportunities and challenges,[2] yet, there is a gap in comprehensive research comparing AI-generated and human-produced audio quality. This comparative, survey-based evaluation aims to measure the quality of AI and human-created podcasts by assessing clarity, accuracy, and delivery among medical communications professionals, as well as identifying strengths and limitations to provide recommendations for optimal use in the field.

Research Design and Methods

We identified a human-narrated, publicly available podcast[3] (~2 minutes) based on an original research article[4] and labelled it Audio Clip B. Next, we prompted ChatGPT-4o (OpenAI, 2024) to generate a 2-minute podcast script based on the same article,[4] which was voiced using an AI text-to-speech program (ElevenLabs) – this became Audio Clip A. Industry professionals rated both clips via an online survey (Google Forms) on engagement, credibility of information, comprehension, and overall preference.

Figure 1. Development and assessment of AI-generated and human-narrated audio clips



Results

The online survey garnered 68 completed forms. Overall, 72% of respondents preferred audio clip B (human-narrated). Results showed that audio clip B (81%) was more engaging compared with audio clip A (AI-generated; 40%). Both audio clips (A vs B) rated highly for clarity (70% vs 78%), comprehension (60% vs 81%), and credibility of information (69% vs 81%). Audio clip A was perceived as "concise" but "robotic," whereas audio clip B was "conversational" and "engaging."

72% of participants **preferred human narrated (audio clip B)**

Figure 3. Comparison of clarity, engagement, organization, and credibility between AI-generated (clip A) and human-narrated (clip B) podcasts (N=68)

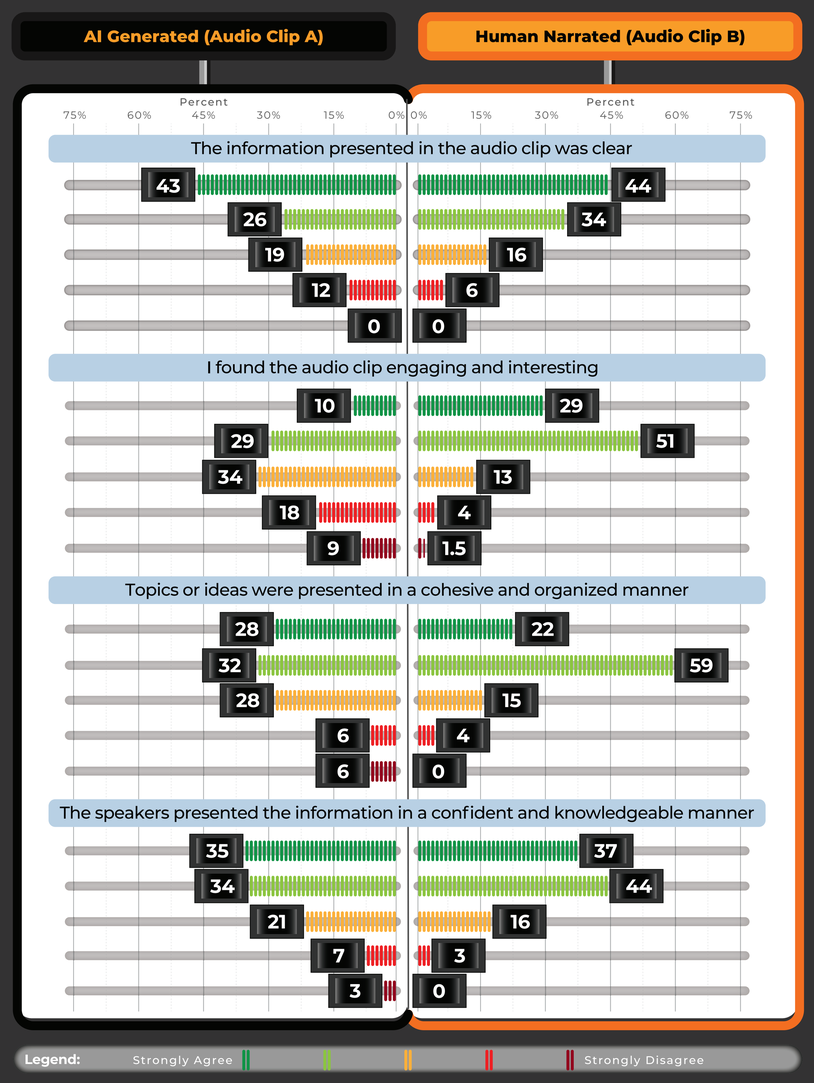
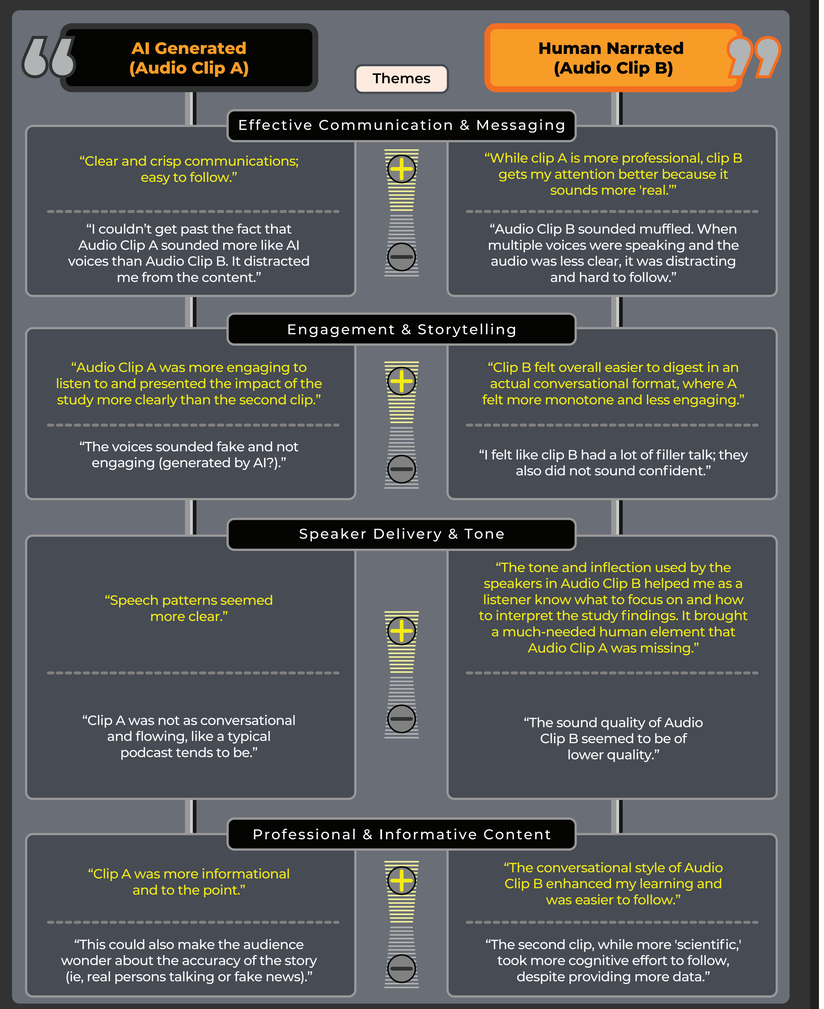


Figure 5. Voices of our listeners: Thematic analysis and sample quotes from AI-generated (clip A) and human-narrated (clip B) audio



Limitations and Future Directions

- This study was limited by its small sample size and evaluation based on one AI- and one human-narrated audio, which may not capture the full variability in production quality or delivery styles
- Future research should include larger surveys across diverse audiences and roles from various therapeutic areas. Expanding the variety of podcast formats, including varied voice types, and collecting more detailed demographic data would enhance generalizability. Continued monitoring of advancements in AI-generated audio will be essential to ensure appropriate application while maintaining accurate and effective messaging in medical communications

Figure 2. Meet our listeners (N=68)

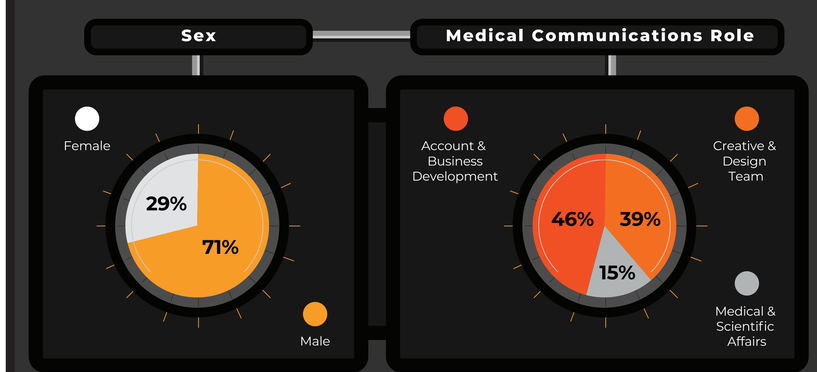
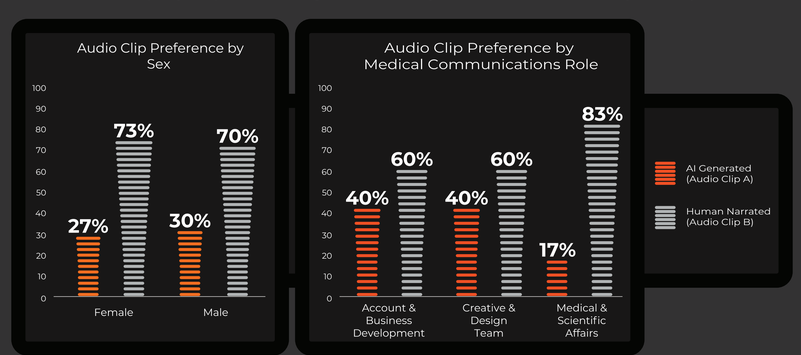


Figure 4. Preferences for AI-generated (clip A) vs human-narrated (clip B) audio by sex and professional role (N=68)



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