Use of AI for Public Health Messages: Does Knowledge of AI Impact Perceived Effectiveness and Credibility?

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Background

- Generative Artificial Intelligence (AI) is a potential cost-effective tool for producing personalized public health messages.
- However, how effective such messages are compared to human-generated messages requires further research.
- Due to its flexibility, AI created videos may make messages more impactful and personalized for various audiences.
- Analyzing public perception of AI generated health promotion videos can provide insight to how AI can assist in disseminating health information.

Hypothesis

- We hypothesize that videos featuring human actors (Condition 3) will be rated higher in perceived effectiveness and credibility compared to those with AI-generated avatars (Conditions 1 and 2).

Methods

Data Collection:
- In 2025, a Qualtrics survey panel was used to collect data from a sample of 903 U.S. adults.
- Participants were invited to complete a 15-minute online survey.

Measures:
- Demographics (e.g. age, sex, race/ethnicity)
- Perceived effectiveness and credibility of the three video types.

Experimental Design

- Participants were randomly assigned to one of three video conditions:
  - 1) AI-generated realistic human avatars
  - 2) AI-generated animated avatars
  - 3) Human actors
- Order of male and female versions were also randomized

Condition 1

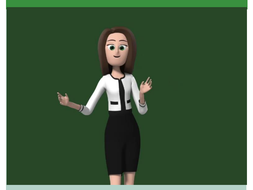


Realistic AI-generated avatar

Male Video

Female Video

Condition 2

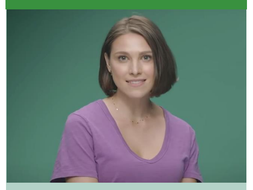


Animated AI-generated avatar

Female Video

Male Video

Condition 3



Control: Human Presenter

Male Video

Female Video

Statistical Analysis

- Statistical Package for the Social Sciences (SPSS) and R will be used to conduct statistical analyses including chi-square and ANOVA tests.
- One-way ANOVAs will be used to examine differences among video rating, speaker rating, perceived effectiveness, and credibility.

Preliminary Results

Preliminary Results for Speaker Evaluation:
$F(2, 900)=4.20$, $p=0.02$
- Condition 1: Realistic AI-generated realistic human avatars
- (M = 3.22; SD = 1.17)
- Condition 2: Animated AI-generated avatars
  - (M = 3.08; SD = 1.20)
- Condition 3: Human actors
  - (M = 3.37; SD = 1.14)

- Higher values = higher likability
- Condition 3: Human actors had a significantly higher mean score for speaker evaluation compared to Condition 2: AI-generated animated avatars.
- No other significant differences in outcomes was found.

Discussion

- This study presents preliminary data that shows that there may be limited differences in reactions to realistic AI avatar vs a real person for health messaging.
- Limitations: Does not examine outcomes long-term, only includes one-time exposure.

Next Steps

- Examine long-term impacts and cost-effectiveness to using AI vs human-generated vides for public health messaging.

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