# AI-Generated Podcasts for Wilderness Medicine Education: A Feasibility Study

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## INTRODUCTION

Podcasts are a popular medical education tool, especially for the review of journal articles, but production requires significant resources. The objective of this study is to determine if a trained artificial intelligence (AI) model could generate a well-received educational podcast based on journal articles and assess listener comprehension with knowledge-based questions.

## MATERIALS & METHODS

Google Gemini AI was trained using Wilderness and Environmental Medicine (WEM) journal articles. The AI then generated 3 different podcasts based on 12 total WEM articles (4 for each podcast), featuring two AI-generated host voices in a journal club format. Participants from the Wilderness Medical Society Student/Resident Committee, the Virginia Tech Carilion Wilderness Medicine fellowship program, and a group of students and residents listened to one of the three randomly assigned podcasts without knowing its AI origin. They completed a 5-point Likert perception survey and a knowledge assessment consisting of CME-style multiple-choice questions related to the articles discussed.

## RESULTS

Thirty-one participants listened to the podcasts and completed the survey and knowledge check questions. 87.5% of respondents agreed or strongly agreed the content was accurate and relevant (mean Likert score 4.37), and 81.25% agreed or strongly agreed that the podcast aided journal article review and learning (mean Likert score 4.14). The average score on the knowledge assessment test was 88.7% correct, with a 5.0% standard deviation.

## RESULTS (CONT.)

**Table 1. Participant Demographics (N=31)**

| | Podcast 1 | | Podcast 2 | | Podcast 3 | | TOTAL | |
|---|---|---|---|---|---|---|---|---|
| | % | n | % | n | % | n | % | n |
| Total Listeners | | 10 | | 12 | | 9 | | 31 |
| Attending Physicians | 20.0% | 2 | 50.0% | 6 | 55.6% | 5 | 41.9% | 13 |
| Medical Students | 20.0% | 2 | 8.3% | 1 | 22.2% | 2 | 16.1% | 5 |
| Medical Residents | 20.0% | 2 | 8.3% | 1 | 0.0% | 0 | 9.7% | 3 |
| Advanced Practice Providers | 30.0% | 3 | 16.7% | 2 | 22.2% | 2 | 22.6% | 7 |
| EMT/Paramedics | 10.0% | 1 | 8.3% | 1 | 0.0% | 0 | 6.5% | 2 |
| Other | 0.0% | 0 | 8.3% | 1 | 0.0% | 0 | 3.2% | 1 |

**Table 2: Listener Perceptions of each podcast and aggregate**

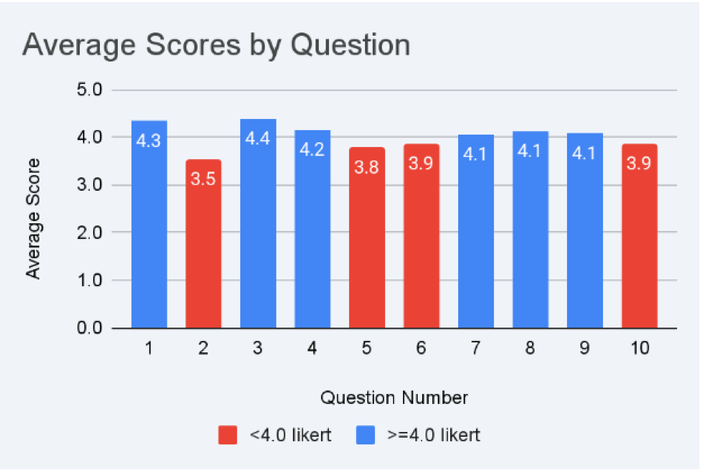
| | Podcast 1: Average | Podcast 1: % Agree or Strongly Agree | Podcast 2: Average | Podcast 2: % Agree or Strongly Agree | Podcast 3: Average | Podcast 3: % Agree or Strongly Agree | TOTAL: Average | TOTAL % Agree or Strongly Agree | P value (ANOVA) |
|---|---|---|---|---|---|---|---|---|---|
| **Questions (Likert scale 1 - 5, strongly disagree - strongly agree)** | | | | | | | | | |
| The podcast introduced me to new topics | 4.60 | 80.00 | 4.42 | 83.33 | 4.00 | 66.60 | 4.34 | 77.40 | 0.11 |
| The podcast reinforced information I have already learned | 3.70 | 60.00 | 3.92 | 75.00 | 3.00 | 33.33 | 3.54 | 58.06 | 0.08 |
| The content of the podcast is accurate and relevant to wilderness medicine | 4.60 | 100.00 | 4.58 | 91.67 | 4.00 | 77.78 | 4.39 | 90.32 | 0.05 |
| The podcast addresses common challenges encountered in wilderness medicine | 4.50 | 90.00 | 4.42 | 91.67 | 3.55 | 44.44 | 4.16 | 77.42 | 0.05 |
| The presentation format of the podcast is good (the speakers' engagement, audio quality, clarity, etc). | 3.80 | 60.00 | 4.42 | 75.00 | 3.11 | 33.33 | 3.78 | 58.06 | 0.07 |
| The length of the podcast is appropriate for understanding its content | 4.00 | 70.00 | 4.17 | 75.00 | 3.44 | 55.56 | 3.87 | 67.74 | 0.31 |
| The podcast made reviewing the journal articles more enjoyable | 4.20 | 80.00 | 4.42 | 91.67 | 3.55 | 55.56 | 4.06 | 77.42 | 0.18 |
| The podcast was a good aid to learn review journal articles and learn new information | 4.50 | 90.00 | 4.42 | 91.67 | 3.44 | 55.56 | 4.12 | 80.65 | 0.02 |
| The podcast is something I would recommend to others to learn topics in wilderness medicine | 4.40 | 70.00 | 4.50 | 91.67 | 3.33 | 44.44 | 4.08 | 70.97 | 0.02 |
| The podcast is something I would like to continue listening to | 4.10 | 70.00 | 4.50 | 91.67 | 3.00 | 44.44 | 3.87 | 70.97 | 0.02 |

**Table 3: Post-podcast comprehension questions**

| | Podcast 1 | Podcast 2 | Podcast 3 | TOTAL |
|---|---|---|---|---|
| Number of questions | 9 | 6 | 10 | 25 |
| Average Questions Correct (%) | 94.44 | 86.11 | 85.56 | 88.70 |
| Std Dev | 8.82 | 15.52 | 9.15 | 4.98 |

## RESULTS (CONT.)

**Figure 1. Mean Participant Perception Scores for AI-Generated Podcasts.**




Question Number Legend:

| | |
|---|---|
| 1 | The podcast introduced me to new topics |
| 2 | The podcast reinforced information I have already learned |
| 3 | The content of the podcast is accurate and relevant to wilderness medicine |
| 4 | The podcast addresses common challenges encountered in wilderness medicine |
| 5 | The presentation format of the podcast is good (the speakers' engagement, audio quality, clarity, etc.) |
| 6 | The length of the podcast is appropriate for understanding the content |
| 7 | The podcast made reviewing the journal articles more enjoyable |
| 8 | The podcast was a good aid to review journal articles and learn new information |
| 9 | The podcast is something I would recommend to others to learn topics in wilderness medicine |
| 10 | The podcast is something I would like to continue listening to |

## CONCLUSION

Despite limitations, these AI-generated podcasts were overall positively received by participants and effectively conveyed educational content, as demonstrated by the scores on the knowledge assessment.

## REFERENCES & ACKNOWLEDGEMENTS

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