

Determinants of Subjective Memory Complaints Among Middle-Aged and Older Users of Terrapino Mobile Application

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Introduction

Background:

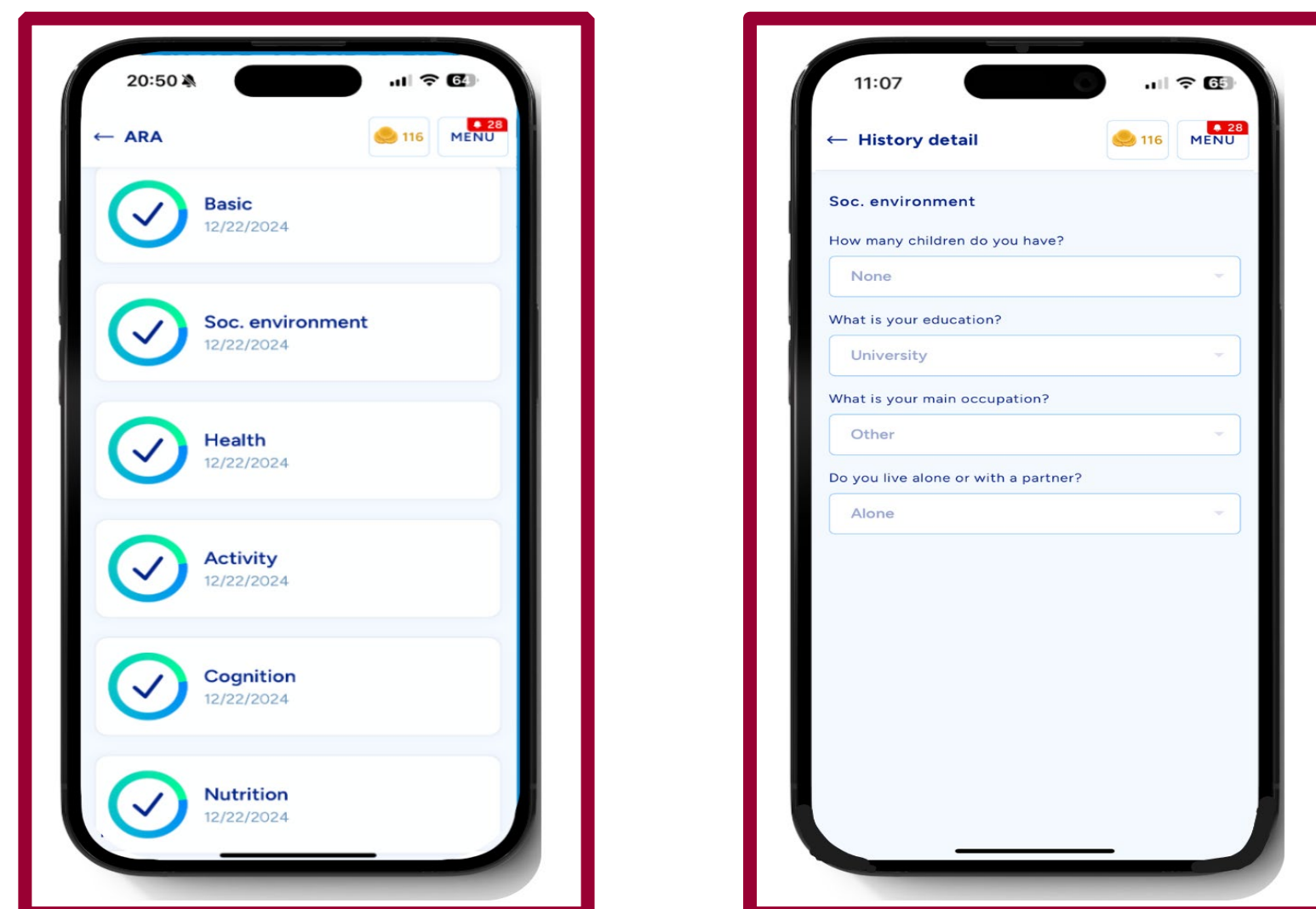
Subjective memory complaints (SMCs), such as difficulty recalling names or recent events, can affect daily functioning.

We examined multiple demographic, health, and lifestyle factors relevant in relation to SMCs in users of Terrapino, a mobile application designed to promote cognitive health and collect risk-related data

Methods

Participants:

- 7,580 dementia-free Terrapino users, aged 50+, who completed a dementia risk assessment survey between December 2022 and June 2025.
- Mean age 64.4±9.0 (50-103) years
- 71% were women
- 43% were college educated
- Data collection is ongoing



Methods (cont.)

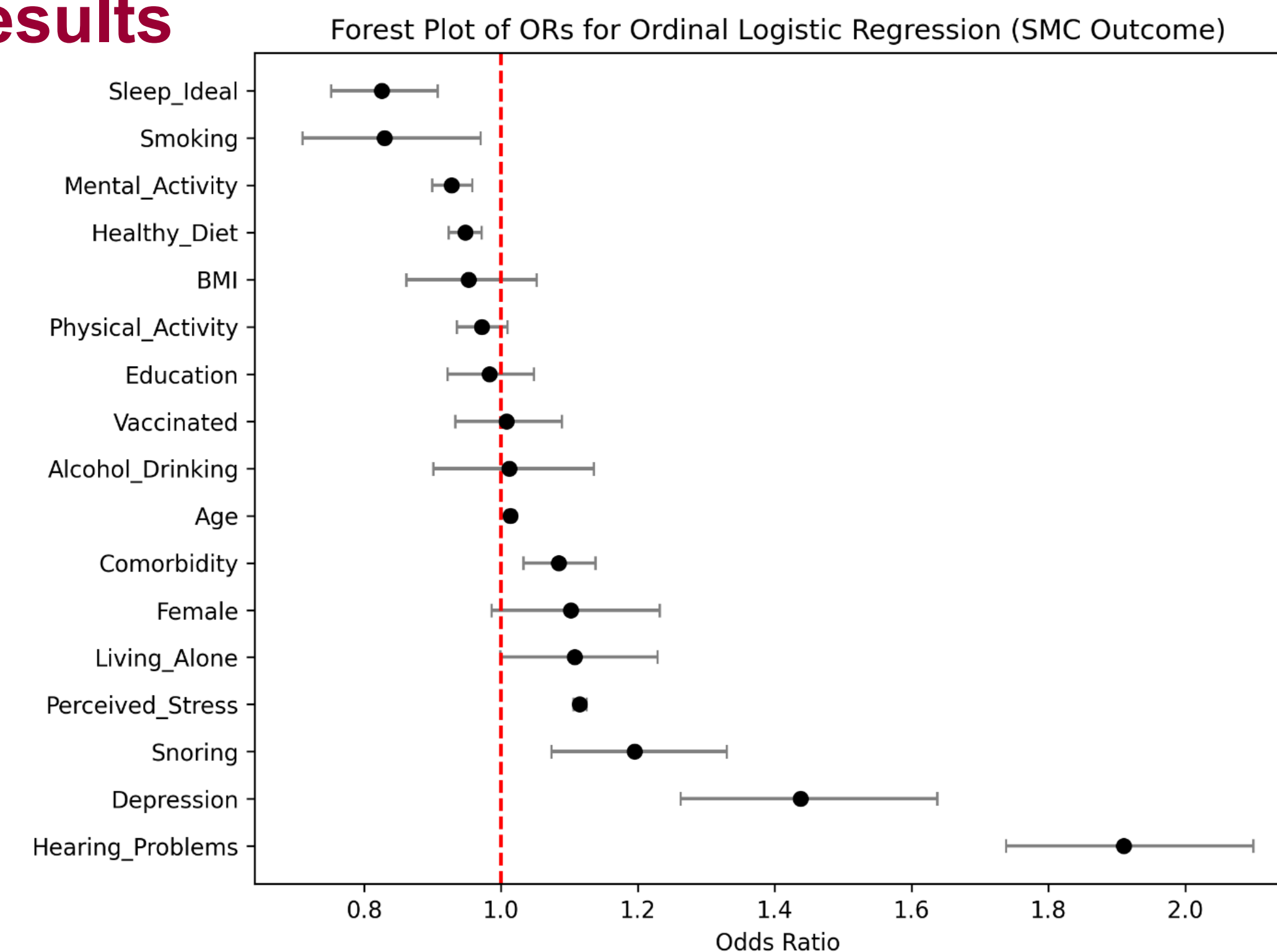
Measures:

- Age, sex, education, BMI, comorbidity, depression, vaccination status, sleep, snoring, smoking, alcohol, perceived stress, living arrangement, physical activity, mental activity, and diet.

Analytical Approach:

- Ordinal logistic regression across count of SMCs.
- Supervised machine learning approach using Extreme Gradient Boosting (XGBoost).

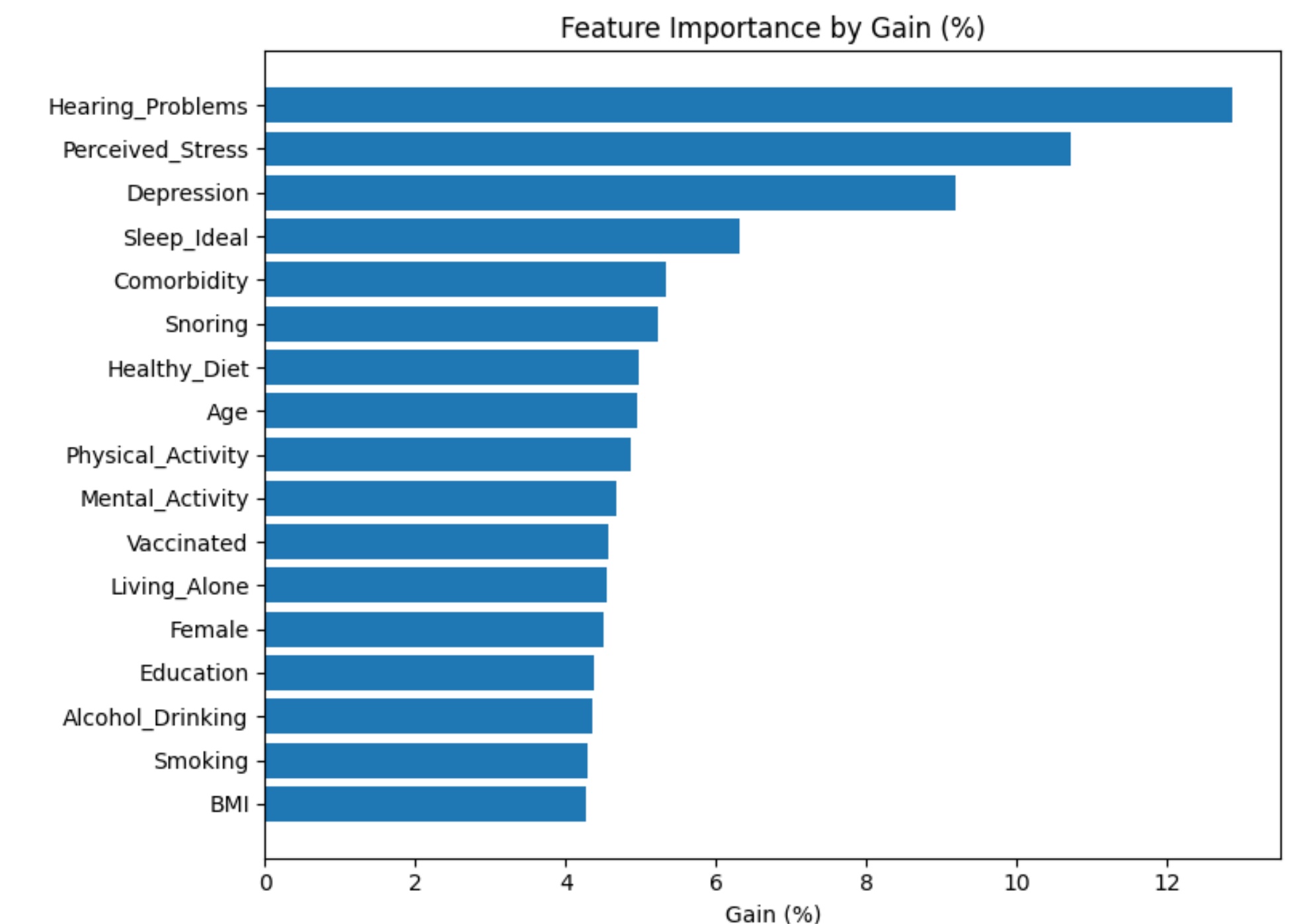
Results



Key message

SMCs were most strongly associated with hearing problems, mental health, and sleep, highlighting modifiable targets and demonstrating the value of digital health platforms for cognitive aging research.

Results (cont.)



Conclusion

- **Perceived stress, depression, and hearing problems were among the most influential predictors of SMCs in the XGBoost model, each contributing approximately 10% of the model's total feature importance (gain).**
- **Hearing problems almost doubled the risk of additional SMCs.**
- **Digital data collection proved feasible for studying these associations.**

For more information

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Download the Terrapino app:



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