Researchers use AI to prompt older adults' participation in research

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In a new study, Florida State University researchers explore the

challenges of recruiting and retaining older adults to participate in research.

The study also marks the first step of a broad, interdisciplinary FSU effort to increasingly use artificial intelligence in research.

In the study, published in *The Gerontologist*, Associate Professor of Sociology Dawn Carr identified core "motivation clusters" among older adults for research participation. Along with her 12 FSU-based co-authors, Carr suggests that identifying those clusters—"fun seekers" and "research helpers," for example—can guide recruitment and retention strategies.

"There is a lack of representation of older adults in research that leads to findings that are skewed," Carr said. "Previous guidance on how best to encourage older adults to participate in research has been one-size-fits-all. Our research finds that older adults' motivations are varied and complex."

Carr, the new director of FSU's Claude Pepper Center, and study co-author Wally Boot, a professor in the Department of Psychology, said the lack of older adults in studies prevails throughout research and has widespread consequences. They said tailored appeals can increase the number and diversity of older adults participating in research.

"The characteristics of the people participating matter since we want to be able to generalize our findings," Boot said. "And being able to recruit large samples of older adults is crucial; without large sample sizes we can't have confidence in our results."

This is the first study stemming from a larger project funded by the National Institutes of Health (NIH). The Adherence Promotion with Person-centered Technology (APPT) project aims to understand

participants' motivations and daily schedules and provide just-in-time support to help them engage in behaviors that keeps them in studies.

The goal is to develop artificial intelligence-based reminder systems that encourage older adults to participate in aging-related research.

"So much momentum and time is lost when people drop out of studies, and clinical trials can fail because people don't engage in the behaviors researchers ask them to perform," Carr said. "How can we test whether a behavioral intervention reduces the risk of cognitive impairment unless participants consistently engage in that behavior over the long term?"

Carr added, "To that end, we've already learned that there are older adults who have different clusters of motivations to participate: brain health advocates, research helpers, fun seekers and multiple-motivation enthusiasts. We found that cognitive difficulties, age, employment status and previous research participation predicted membership in these categories."

Boot said artificial-intelligence approaches help predict the types of motivational messages that might resonate and keep participants on track but also the right time to deliver those messages.

"People have habits, and we can learn routine without being obtrusive," he said. "When their adherence to the intervention begins to falter, we can detect that and provide a tailored motivational message at a time when we predict they are likely available to reengage with the study."

The study is laying the groundwork for the further use of artificial intelligence, Boot said.

"Two large clinical trials will provide a very rich dataset to further develop algorithms to help predict who may be at most risk for poor

adherence and the best tailored approaches to reengage them," he said. "Ultimately, we may be able to predict and prevent lapses and dropout before they happen. This is just a first step to some very exciting possibilities."

More information: Dawn C Carr et al, Motivation to Engage in Aging Research: Are There Typologies and Predictors?, *The Gerontologist* (2022). DOI: 10.1093/geront/gnac035

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