

New AI research reveals scale of dementia in India

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Dementia in India may be higher than previous estimates have suggested and could be more in line with prevalence rates for countries such as the United States and the United Kingdom, according to a new collaborative

study by researchers from the University of Surrey, University of Southern California, University of Michigan, and All India Institute of Medical Sciences.

In the first study of its kind, researchers used an [artificial intelligence](#) (AI) technique known as semi-supervised machine learning to analyze data from 31,477 older adults. They found that the prevalence rate of [dementia](#) in adults aged 60 or over in India could be 8.44%—equating to 10.08 million older adults in the country. This compares to prevalence rates recorded in similar age groups (in separate research studies) of 8.8% in the United States, 9% in the United Kingdom and between 8.5% and 9% in Germany and France.

Dr. Haomiao Jin, co-author of the study published in *Neuroepidemiology* and Lecturer in Health Data Sciences at the University of Surrey, said, "Our research was based on the first and only nationally representative aging study in India with more than 30,000 participating [older adults](#) in the country. AI has a unique strength in interpreting large and [complex data](#) like this, and our research found that the prevalence of dementia may be higher than prior estimates from local samples."

The research team developed an AI learning model. The model was trained on data, which consisted of 70% labeled dataset with dementia diagnoses from a novel online consensus. The remaining 30% of the data was reserved as a test set to assess the AI's predictive accuracy. The AI taught itself to predict dementia status for unlabelled observations without dementia diagnoses in the dataset.

Professor Adrian Hilton, Director of the University of Surrey's Institute for People-Centered AI, said, "As we are seeing with this research, AI has a huge potential to discover patterns in complex data, improving our understanding of how diseases impact people across very different communities to support the development of precision medical

interventions to save lives."

More information: Haomiao Jin et al, Estimating the Prevalence of Dementia in India Using a Semi-Supervised Machine Learning Approach, *Neuroepidemiology* (2023). [DOI: 10.1159/000528904](https://doi.org/10.1159/000528904)

Provided by University of Surrey

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