

Latest Alzheimer's Research

GUT/BRAIN HEALTH AND REACHING MINORITY COMMUNITIES



Kao Lee Yang
UW-Madison

Kao Lee Yang is a graduate student at UW-Madison's Neuroscience and Public Policy (N&PP) program. This dual program degree will allow her to not only learn more about dementia, but also how scientific knowledge of dementia could impact policies and practices. "I love asking questions and studying complex problems, so research is a good fit for me," Yang said. "I want to be able to translate research into practices to help families on a journey with dementia."

Windows of Intervention

"The brain is a complex environment and my work contributes to identifying optimal "windows" for intervention or treatment that may slow Alzheimer's disease," Yang said. "Many people are familiar with amyloid plaques (buildup of protein fragments outside of neurons) and tau tangles (buildup of tau proteins within neurons)," Yang said. "But less is known about how these plaques and tangles interact with the brain environment. Recent animal studies outside our lab have shown that disruptions in the normal gut development could also impact the brain environment. We examined this relationship in our lab with data collected from humans. Our preliminary results suggest that different levels of gut microbes do associate with brain myelin, which are protective fatty sheaths that protect normal nerve cell functions. This is important because it underlines the importance of looking at multiple factors when studying Alzheimer's disease, beyond the amyloid plaques and tau tangles."

Impact of Dementia on Minorities

"Dementia in underserved communities is an ever-increasing important topic and something I'm incorporating in my research," Yang said. "Broadly speaking, aggregated data shows us that minority communities have a higher prevalence of dementia. We also know that there is a growing health disparity with minority populations, and a 2021 special report from the Alzheimer's Association reported that discrimination is a barrier that ethnic and racial minority communities face when seeking health care" (citing "Half of Black Americans (50%) report they've experienced discrimination when seeking health care; more than 4 in 10 Native Americans (42%) and one-third of Asian Americans (34%) and Hispanic Americans (33%) likewise report having experienced health care discrimination.").*

"I think this is something researchers and healthcare professionals need to acknowledge," Yang said. "We can do so by being intentional in identifying unconscious biases and how they can impact our actions. Addressing discrimination faced by underserved communities will hopefully increase early diagnosis and awareness in minority communities."

"Identifying barriers to diagnosis is another factor to consider in minority communities," Yang said. "We met with one local organization in the Hmong community and a key barrier to early diagnosis was language. Most materials are only available in English, which made it more difficult to share with non-English speaking communities."

Personal Connection

"I lost my grandmother to dementia," Yang shared. "It was heartbreaking when she could no longer remember me or my father (her son). It's a helpless feeling, and that set me on a path to learn about the brain and what led this to happen to her."

"Dementia is devastating on an interpersonal level, which is why increased research to find a cure is critical," Yang said. "We need to continue to have funding for focused research to help us untangle all the complex relationships that give rise to Alzheimer's."

Yang is a part of the Neuroscience Training Program (NTP) in the Wisconsin Alzheimer's Disease Research Center. She studies under Dr. Barbara Bendlin, who has been awarded an Alzheimer's Association grant in the past.

*Alzheimer's Association 2021 Alzheimer's Diseases Facts and Figures Report