NIH to Fund Miller School Study on How Personalized Obstructive Sleep Apnea Treatment Impacts Brain Health among Blacks

The National Institute on Aging has awarded University of Miami Miller School of Medicine faculty a five-year grant for nearly $3.8 million to study how access to personalized obstructive sleep apnea (OSA) treatment might impact the brain health of Black OSA patients in South Florida.

Girardin Jean-Louis, Ph.D.

“There is scientific evidence that brain changes suggestive of Alzheimer’s disease occur among patients with OSA, and impairments in memory, executive function, attention, and vigilance are common in these patients,” said Girardin Jean-Louis, Ph.D., director of the Center for Translational Sleep and Circadian Sciences (TSCS) and professor of psychiatry and behavioral sciences at the Miller School. “Fortunately, OSA treatment can normalize these biomarkers of Alzheimer’s disease and improve cognitive function, as well as reduce systemic inflammation and improve insulin sensitivity, blood pressure, and serum lipids and lipoproteins.”

But little is known about the impact of OSA treatment among Black patients, a group with disproportionate burdens of OSA...
and Alzheimer’s disease, according to Dr. Jean-Louis, co-principal investigator (PI) for the study “Personalized OSA treatment and effects on AD biomarkers and cognition among blacks,” also called the PRAISE study. The other co-PI is Azizi Seixas, Ph.D., associate director of the TSCS and associate professor of psychiatry and behavioral sciences at the Miller School.

This study aims to help close the knowledge gap by recruiting a diverse group of 330 newly diagnosed Black/African American OSA patients, ages 60 to 85 years, in South Florida.

**Personalizing with Digital Technology**

Drs. Jean-Louis and Seixas will assess the effectiveness of a novel digital technology developed at the Miller School to make OSA care more personalized for Black patients, according to Dr. Seixas, who is founding director of The Media Innovation Lab (The MIL) at the Miller School.

> Azizi Seixas, Ph.D

“This technology captures personalized data using ecological momentary assessment — a technique that can ascertain real-time and contextual responses from patients — to understand unique barriers and facilitators of adherence to sleep apnea treatment. It also navigates patients throughout the treatment journey through personalized support to optimize sleep apnea treatment adherence,” Dr. Seixas said.

Miller School investigators will determine whether OSA treatment improves Alzheimer’s disease biomarkers and cognitive function among Black patients and improves their
health-related quality of life, daytime functioning, and sleep quality.

“A unique characteristic of the TSCS relates to its focus on cardiovascular and brain health outcomes of individuals from disadvantaged and underserved communities,” Dr. Jean-Louis said. “This new research project grant (R01) PRAISE brings us closer to our goal of implementing solution-focused interventions to address the unique impediments to adequate access to sleep health care among Blacks. More specifically, it aims to navigate Blacks in South Florida presenting with untreated sleep apnea to a personalized digital health solution that will enhance their ability to make autonomous decisions regarding the sleep apnea care pathway that is ideal for their own unique circumstances.”

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Enhancing adherence to sleep apnea treatment, which remains a daunting challenge, will enable Miller School and other researchers to assess whether treatment leads to reduction of biomarkers of inflammation and Alzheimer’s disease and improvement of neurocognitive profile, according to Dr. Jean-Louis.

“This new award ensures that Black patients with sleep apnea benefit fully from the advances made in the field of sleep medicine regarding improvement in overall physical health and
quality of life,” Dr. Jean-Louis said.