Headline: U of T researcher aims to improve treatment, outcomes for people with post-stroke sleep apnea

Subhead: StrokeCog Clinical Trial Training Platform fellowship will enable Dr. Reeman Marzouqah to gain valuable insight into optimal treatments for common sleep disorder

University of Toronto post-doctoral researcher Reeman Marzouqah has been awarded a StrokeCog Research Post-Doctoral Fellowship Award to study different categories of post-stroke sleep apnea, and determine which treatments are most effective.

Obstructive sleep apnea, which happens when a person's breathing stops and starts many times during sleep, is a common side effect of stroke. A potentially serious condition, it can lead to issues with thinking, memory, and other health concerns.

During her PhD research, Dr. Marzouqah noticed differences in how clinical trial participants responded to oropharyngeal (mid-throat) exercises to treat sleep apnea. These variations sparked an interest in understanding the role of endotypes, or subtypes of the condition, in order to identify which therapies are best suited for each patient.

Working under the supervision of Dr. Mark Boulos at the Sleep Neurology Clinic and Sleep Laboratory at Sunnybrook Health Sciences Centre, Dr. Marzouqah's fellowship research begins by clustering stroke patients into categories of sleep apnea, based on their physical and functional characteristics. She will do this by analyzing data on about 500 patients collected by Dr. Boulos over many years.

Next, Dr. Marzouqah will study how these different endotypes influence recovery and overall health after stroke. Finally, she will determine which therapies are most effective for each category of sleep apnea. Standard therapy for sleep apnea typically involves the use of a CPAP (Continuous Positive Airway Pressure) machine. Alternative therapies include oropharyngeal exercises and dental appliances that prevent the tongue from blocking the airway.

Originally from Amman, Jordan, Dr. Marzouqah earned undergraduate and Master's degrees in Speech-Language Pathology in her home country before completing a PhD at U of T. "What drew me to this work is the complexity and clinical significance of post-stroke obstructive sleep apnea," she says. "This research aims to address a knowledge gap in the field by identifying high-risk obstructive sleep apnea endotypes specific to stroke survivors, potentially transforming early diagnostic protocols and enabling personalized treatment plans."

As well, the research will create a valuable dataset on obstructive sleep apnea endotypes in stroke patients, informing future studies and contributing to wider scholarly and medical research.

This research is especially important because personalized obstructive sleep apnea treatment after stroke has the potential to improve patient recovery, reduce healthcare costs, enhance workplace productivity, and decrease work-related injuries.

"The study's findings hold the promise of driving substantial changes in medical practice and policy, ultimately improving the quality of life for post-stroke obstructive sleep apnea patients and contributing to public health and safety," Dr. Marzouqah explains.

On a personal note, Dr. Marzouqah says the fellowship award "is of great significance to me. It aligns with my career goal of bridging the gap between research and clinical practice."