



Presenter: Jordan Nolan

Session & Time: Poster III

Room/Time: GLH / 3:30-4:30

Discipline: Nursing

Faculty Mentor: Rafael Romo

Digital Portfolio URL:

Title: The Impact of Hyperbaric Oxygen Therapy and Functional Recovery in Chronic Stroke Patients

Abstract:

Stroke is a leading cause of long-term disability, often resulting in persistent motor and cognitive impairments despite standard rehabilitation therapies. Hyperbaric oxygen therapy (HBOT) has emerged as a potential adjunct treatment due to its ability to enhance oxygen delivery, promote neuroplasticity, and improve cerebral blood flow in damaged brain tissue. The aim of this study is to determine whether the addition of HBOT to standard rehabilitation improves motor and neurological function in adults with chronic ischemic stroke compared to standard rehabilitation alone. A quantitative, randomized controlled study is proposed in an outpatient rehabilitation setting, including adult patients who are at least six months post-stroke and continue to experience functional deficits. Participants will be randomly assigned to either an intervention group receiving HBOT in addition to standard rehabilitation or a control group receiving standard rehabilitation only. Recruitment will occur through outpatient rehabilitation clinics,

with inclusion criteria including adults aged 18 years or older who are medically stable. Outcome measures will include neurological function using the NIH Stroke Scale, functional independence through Activities of Daily Living assessments, and quality of life measures. Additional data may include imaging findings and biomarkers related to inflammation and neuroplasticity. Statistical analysis will compare pre- and post-intervention outcomes between groups using appropriate inferential tests such as t-tests or analysis of variance. This study aims to provide evidence on the effectiveness of HBOT as an adjunct therapy, with the potential to improve functional recovery and inform rehabilitation practices in chronic stroke care.