ADVANCED STROKE UPPER EXTREMITY PROGRAM (ASUP) DURING INPATIENT STROKE REHABILITATION: A RANDOMIZED CONTROL STUDY

Arnel DM. Cruz
University of Perpetual Help System Laguna
PHILIPPINES
Acruzotr1111@gmail.com

Noel R. San Antonio
University of Perpetual Help System Laguna
PHILIPPINES
noel.sanantonio@uphsl.edu.ph

Susana C. Bautista
University of Perpetual Help System Laguna
PHILIPPINES
Bautista.susana@gma.uphsl.edu.ph

ABSTRACT

Background: Stroke-induced upper extremity impairment is a significant cause of disability, affecting daily activities and quality of life. The Advanced Stroke Upper Extremity Program (ASUP) has been developed to address these deficits through intensive, robot-assisted rehabilitation designed to leverage neuroplasticity for functional recovery.
Methods: In a randomized control trial at the a rehabilitation facility in Qatar, 30 stroke inpatients were allocated to either a control group receiving standard therapy or an experimental group receiving standard therapy supplemented with ASUP. The Action Research Arm Test (ARAT) was employed to evaluate upper limb function both pre- and post-intervention. Analysis included paired and independent t-tests to compare intragroup and intergroup improvements.
Results: Initial assessments revealed considerable upper limb dysfunction in both groups, with mean ARAT scores of 3.85 and 4.14 for the control and experimental groups, respectively. Post-intervention, both groups exhibited improvements in ARAT scores; the control group's mean score increased to 23.21, while the experimental group's mean score rose to 31.43. However, statistical analysis indicated no significant difference between the improvements in the control and experimental groups ($p=0.148$).
Discussion: The study findings align with existing literature that suggests benefits from robot-assisted therapy (Meyer et al., 2021; Platz, 2021; Tadi and Lui, 2022), yet do not conclusively support the superiority of ASUP over traditional therapy methods.
Conclusion: While the ASUP appears to be a promising adjunct to conventional stroke rehabilitation for improving upper limb function, the study did not find a statistically significant difference between the experimental and control groups. Further research with larger sample sizes and longer follow-up is warranted to determine the full impact of ASUP on functional recovery after stroke.

Keywords: Stroke Rehabilitation, Upper Extremity, Neuroplasticity, Robot-Assisted Therapy, Randomized Control Trial