

Spatial Music in Neurorehabilitation

Nergiz Turgut

Universidad San Francisco de Quito (USFQ), Quito, Ecuador

Spatial attention impairments, such as hemispatial neglect, affect a large proportion of stroke survivors worldwide, with impact in daily life activities and hinder recovery. Previous literature has shown improvements in neglect symptoms and daily life activities using visual cueing combined with a motivational, individual-oriented task adapted to the neglect severity of the stroke survivor. Recent studies have shown that auditory spatial cueing, combined with music adapted to individual preferences, can lead to a reduction in egocentric neglect symptoms. This offers great potential for a low-cost, effective neurorehabilitation method that is easy to implement, particularly in middle- and low-income countries.

The following pilot study conducted in Quito, Ecuador, explores this approach by combining auditory drift cues with music chosen by stroke survivors. The drift cues are adapted to the severity of each patient's neglect symptoms. Participants are evaluated for spatial difficulties using classical neglect bisection and cancellation tasks, as well as experimental auditory tests to measure their ability to locate sounds. Over the course of two weeks, stroke survivors receive auditory spatial cueing combined with their preferred music category, three times a week (minimum of 6 sessions).

This investigation is the first neurorehabilitative study targeting spatial impairments after right hemispheric stroke, combining adaptive spatial auditory cueing with music in Ecuador. The aim is to develop a cognitive stimulation strategy that can reduce neglect symptoms as measured by clinical and experimental assessments. The initial findings of this investigation are expected to be presented in Summer 2023.