Neurocognitive Considerations and Impacts in Chronic Migraines

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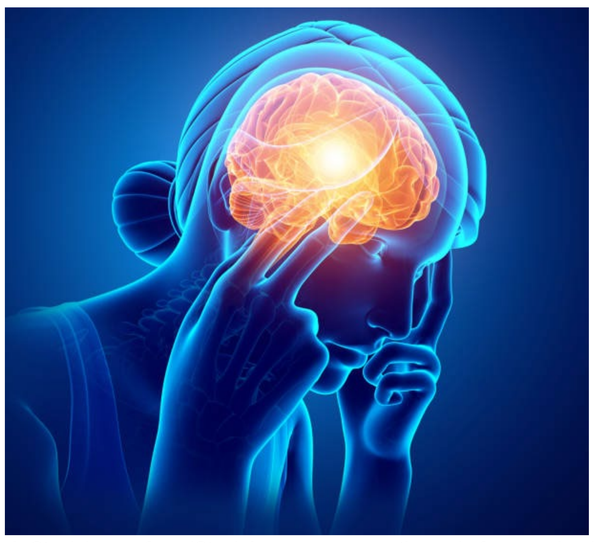
Background

Migraine Principal Effects
- Neuromuscular dysfunction
- Increased neuronal firing
- Inflammation
- Cortical spreading depression.

Migraine Principal Symptoms
- Pain
- Aura
- Brain fog
- Confusion
- Hangover
- Multiple hypersensitivities
- Decreased memory capacity

Effects and Symptoms lead to neurocognitive and neuropsychological deficiencies in many patients. *This study aims to investigate migraines and neurocognitive function.*



Picture 1. Stock image from iStock Images representing pain from a migraine.

Methods

Neurocognitive skills were elevated across migraine patients utilizing Creyos for data collection and analysis. Preliminary data (n=173) gathered neuropsychiatric results individually via computer program across 12 neurocognitive metrics. Migraine patients were compared to standardized results for significant variations in cognitive performance.

Additionally, following treatments including chiropractic manipulations, diet modifications, posture aids, medications, and injections, several neurocognitive performance areas improved.

Conclusion

These findings indicate a significant negative relationship between migraines and neurocognitive performance. As migraine frequency increases, neurocognitive performance decreases. With these treatment methods reducing the frequency of migraines, our data suggests that these patients will have increased neurocognitive skills and a decrease in negative symptoms associated with focus, organization, memory, and other neuropsychological functions.

Migraine patients typically present with decreased focus, organization, memory, and other neuropsychological functions

Baseline Phenotype

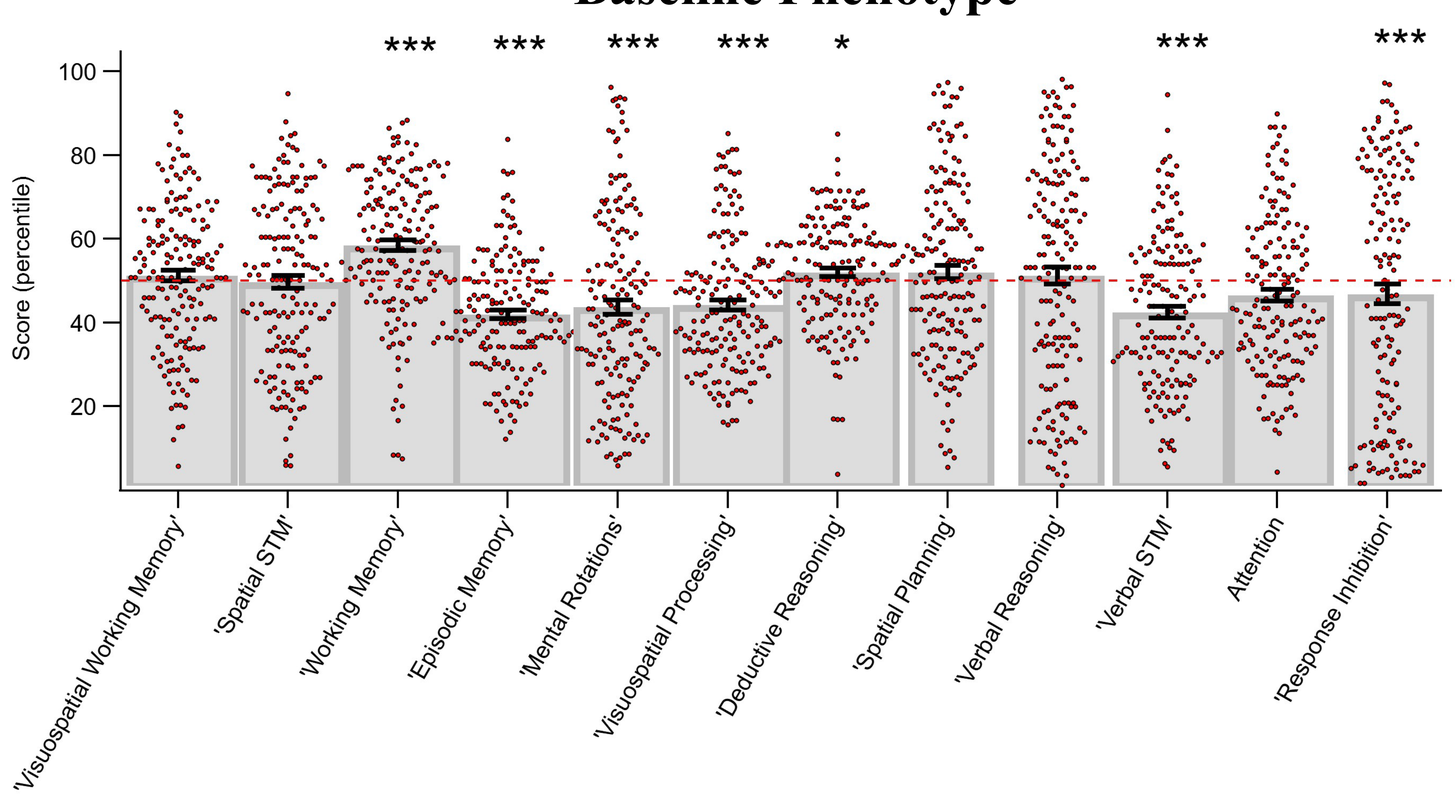


Figure 1: At baseline, migraine patients showed significantly decreased (* FDR<.05, ** FDR <.01, *** FDR <.001) performance on neurocognitive performance evaluations.

3 Months Post-Treatment

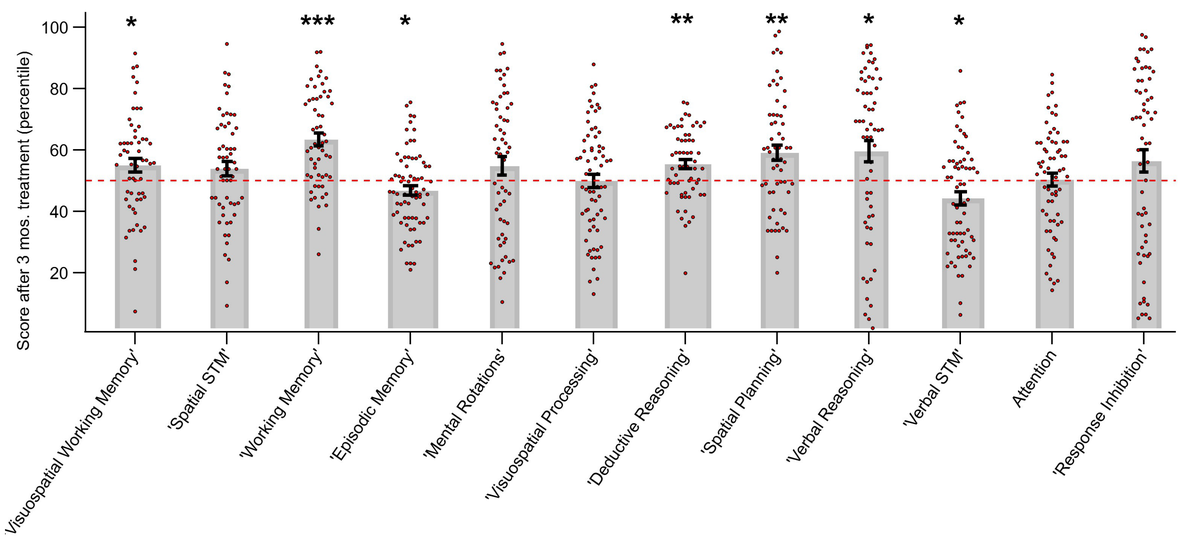


Figure 2: Following 3 months of treatment, migraine patients showed significant improvement from baseline neurocognitive performance (* FDR<.05, ** FDR <.01, *** FDR <.001) , with visuospatial processing and response inhibition no longer below average plus spatial planning and verbal reasoning now raising to above average.

Cognitive Regression

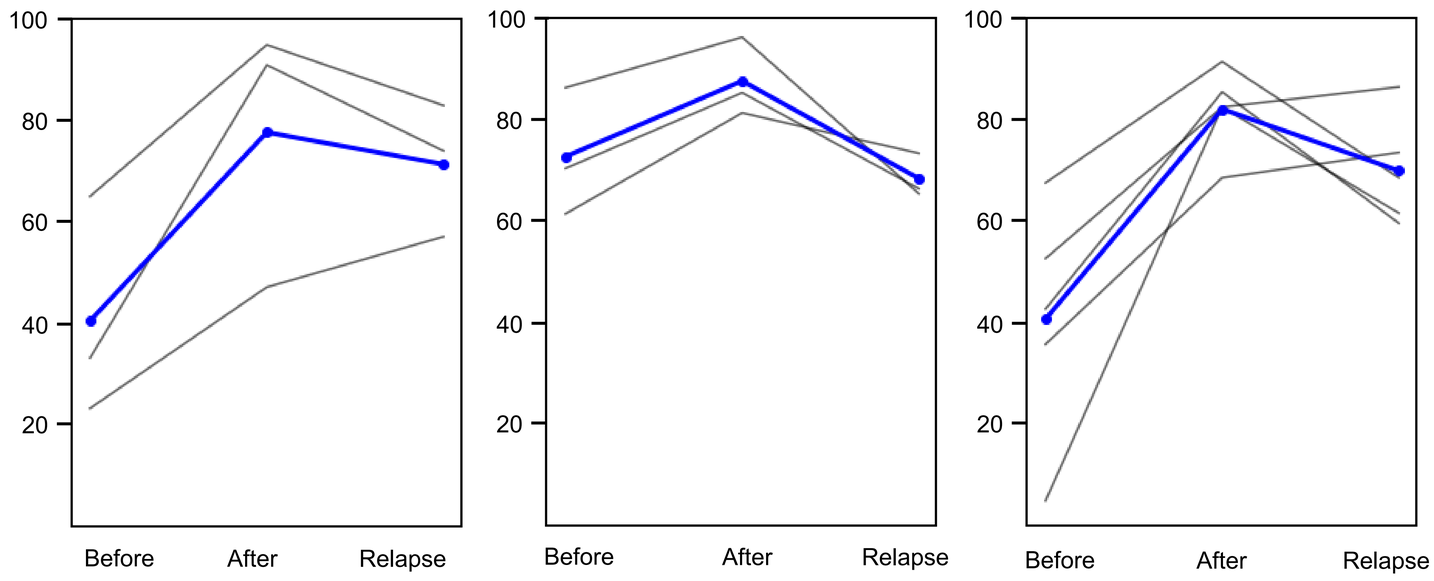


Figure 3. Cognitive Regression following migraine relapse. Upon relapse of migraines, participants subsequently performed worse in follow up neuro-cognitive evaluations. Charts show domains for which individuals improved by 10 or more points.

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