

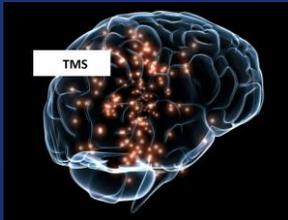
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Background

disorders-Transcranial magnetic stimulation (TMS), is a procedure in which magnetic fields stimulate nerve cells in the brain to induce an electric current at a specific

-Magnetic stimulation, generated by a coil to the head, either depolarizes or excites neurons in the brain.

-Used as a tool to improve brain function across communication



Methods

-70 research articles included in current study

-Organized into the following categories: attention, memory, daily living skills, cognition, confrontation naming, articulation, and naming.

-Areas analyzed further in terms of location and frequency.

Procedures

-Outcome measures obtained through:

- Formal cognitive and speech and language assessments.
- Caregiver/ participant questionnaires and interviews.

-Change in participants performance from pre- and post- treatment were analyzed to determine the efficacy of rTMS across communication symptoms.

Results

-Low frequency within Broca's: Significantly improve naming of treated items, spontaneous speech (i.e., descriptive speech, conversational speech, increased word types), auditory comprehension, and repetition, when given low frequency stimulation within the Broca's area.

-significant gains in auditory comprehension were observed in subjects with Alzheimer's disease.

-High frequency/Dorsolateral prefrontal cortex: medium to significant improvement in cognitive functions such as memory, attention, verbal learning and problem solving in patients with Alzheimer's.

Discussion

-The current study revealed patterns for enhanced communication processes, corresponding to combinations of rTMS treatments and subject populations.

-Past research is consistent with the findings mentioned in results section.

-Gap areas of research identified (e.g., limited exploration of motor cortex)

-Current study found consistencies in combinations that were ineffective in treating communication processes. This will be helpful for selecting the forms of stimulation most beneficial across patients and predicting treatment outcomes.

Findings will aid in future research by narrowing focus on most effective rTMS treatment methods.