

The effect of accelerated TMS versus daily sessions on the clinical outcomes of Depression

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Introduction

Traditional TMS protocols involving **daily sessions can be inconvenient** for patients travelling long distances to a TMS clinic.

Alternatively, **multiple sessions per day (aTMS)** involves **less travel time** and the possibility of an **earlier response**.

We investigated the impact of **accelerated Transcranial Magnetic Stimulation (aTMS)** compared to **daily sessions** on outcomes in **depression patients**.

Method

A retrospective chart review of **253 patients** was analysed using multiple regression.

Patient Inclusion Criteria

- Patients who received **at least 5 days** of treatment
- Patients who received any of the standard depression protocols

aTMS Intensity Scores

- An aTMS intensity variable (aTMSiv) was calculated by:
- dividing **total number of TMS sessions** by **number of days between the first and last session**

Descriptive Data	
Total N	253
Age of Patients (Years)	Mean: 41.9 Range: 16-86
Gender (Males:Females)	133:120
Baseline PHQ-9	Mean: 17.86
Number of Sessions	Mean: 24.96 Range: 6-91
Number of Treatment Days	Mean: 28.32 Range: 5-166
aTMS Intensity Variable	Mean: 1.08 Range: 0.09-3

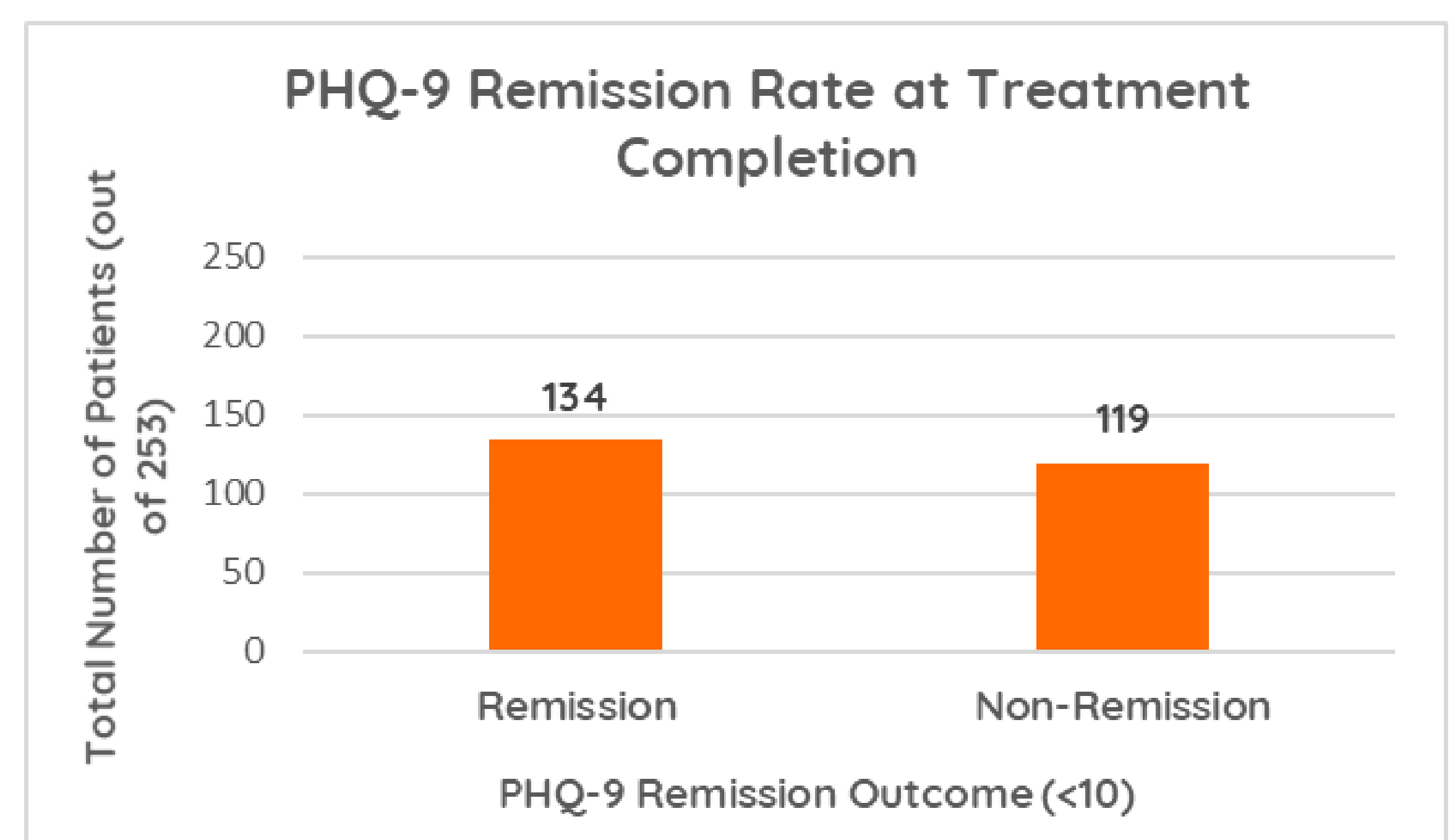
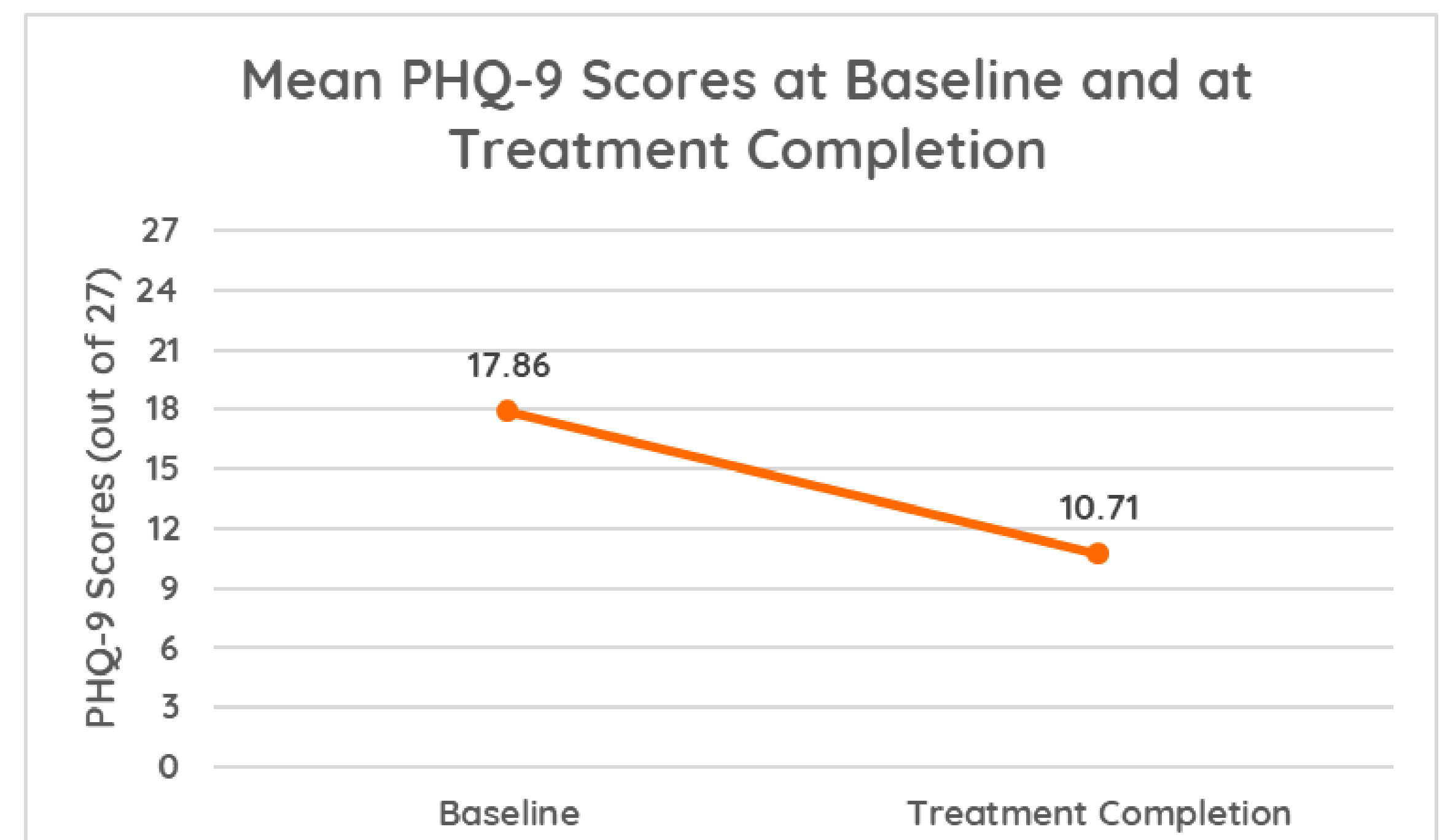
Variables

- The dependent variable was percentage reduction of PHQ-9 scores from baseline (mean = 17.86) to treatment completion (mean = 10.71)
- **The mean reduction in PHQ-9 was 39%**
- **PHQ-9 remission rate was 53% (Final score <10)**
- The independent variables included: aTMSiv, PHQ-9 baseline score, number of sessions, age and sex

Procedure

Patients were treated for unipolar depression with either 10Hz TMS or intermittent Theta Burst Stimulation (iTBS) over the left Dorsolateral Prefrontal Cortex (LDLPFC).

These have been shown to deliver equivalent outcomes (Blumberger et al, 2018).



Results

A multiple regression was performed to analyse associations between the dependent and independent variables.

Collectively the IVs predicted PHQ-9 reduction at a statistically significant level ($F(5, 247) = 6.57, p = 9.19E-06, R^2 = 0.12$).

aTMSiv did not significantly predict PHQ-9 reduction ($F(1, 251) = 0.06, p = 0.80, R^2 = 0.0002$).

Only number of sessions significantly predicted PHQ-9 reduction in this model ($t = 5.06, p = 7.99E-07$).

Conclusions

As the aTMSiv **did not predict** the change in PHQ-9, the frequency at which TMS is delivered **does not affect the outcome** when treating depression.

Thus, either daily sessions or aTMS can be utilised to best fit the schedule and lifestyle of the patient.

Conflict of Interest & Funding

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