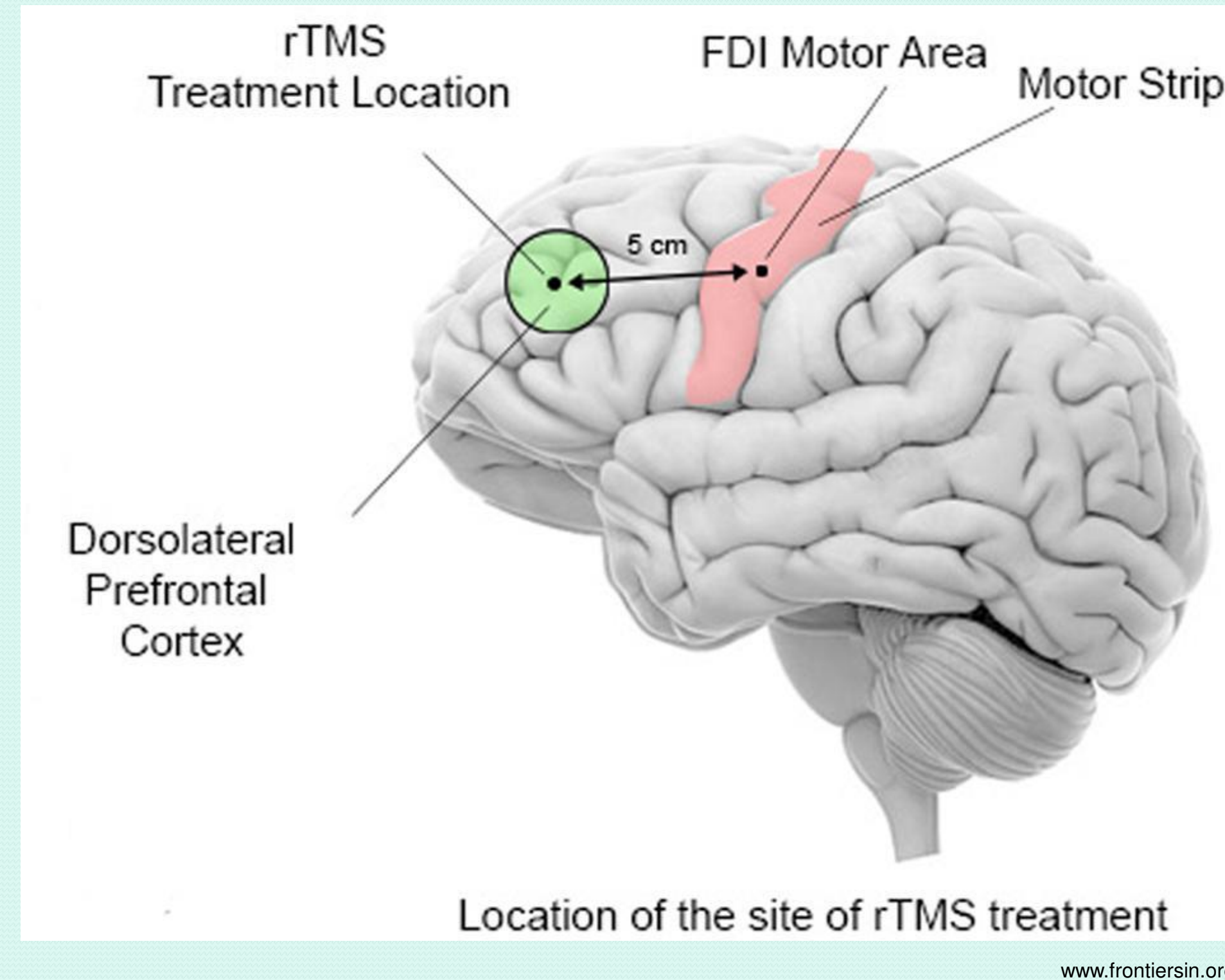


# rTMS for Anxiety Symptoms in Patients with Treatment-Resistant Depression

## BACKGROUND

- Co-morbid anxiety with TRD is distressing and can persist despite established depression treatments suggesting a role for rTMS augmentation.
- Our previous rTMS for TRD investigations showed a possible change in anxiety symptoms.



## METHODS

- Retrospective chart reviews on patients (n=77) receiving TMS at Pine Rest from July 1, 2014 to December 31, 2018.
- Left-sided DLPFC rTMS. 3,000 pulses at 10Hz
- Patients ages  $\geq 18$  and older receiving approximately 36 rTMS acute series treatments.
- Baseline anxiety scores meeting clinical significance regardless of co-morbid anxiety diagnosis. (at baseline GAD-7  $\geq 10$ , HAMD Anxiety Subscale  $\geq 7$ )
- Response and remission rates were calculated for each anxiety scale.
- Reliable change and clinically significant change were calculated for each scale based on the work of Jacobson and Truax (1991) and Kroenke (2007)

## RESULTS

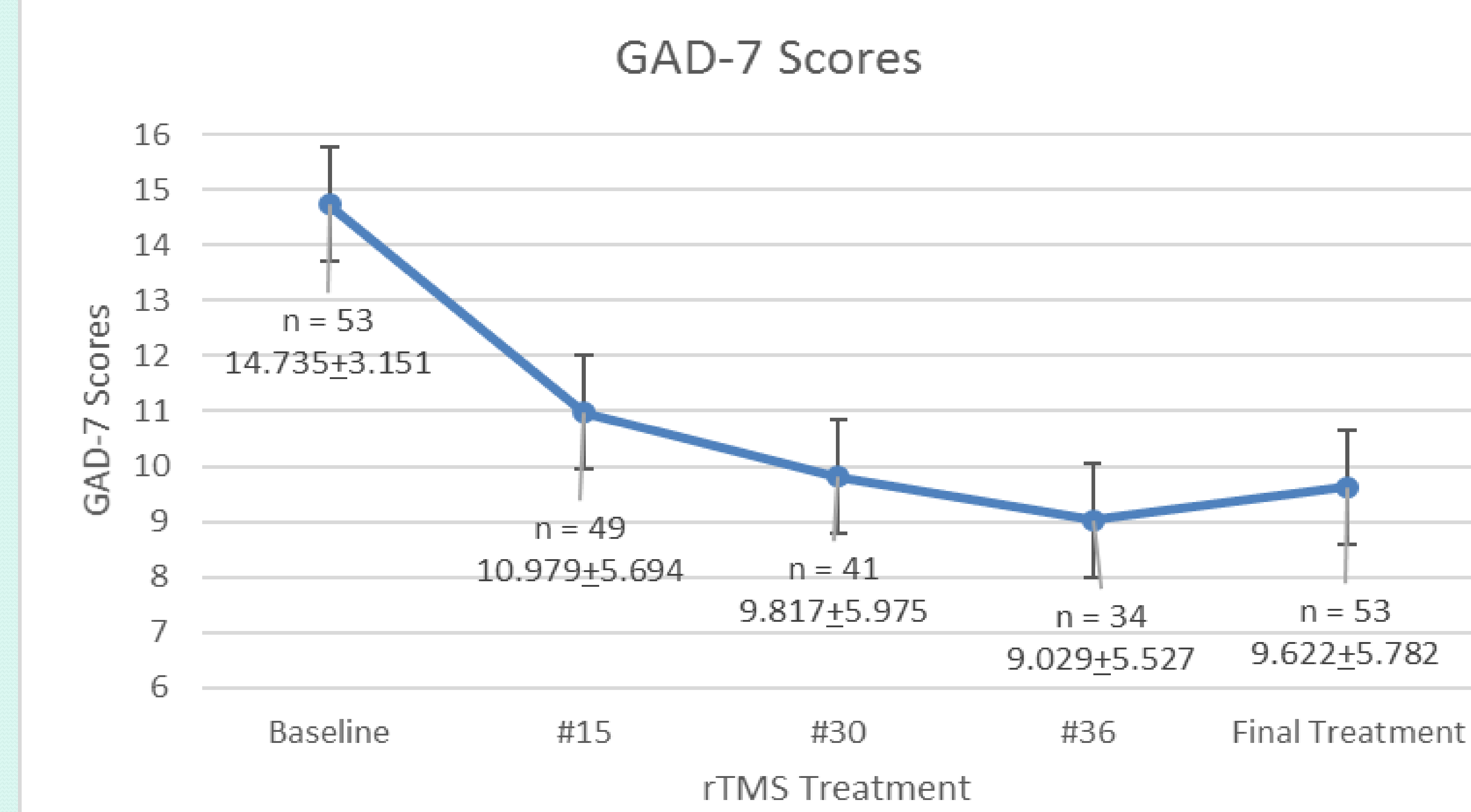
### Demographics:

- 77 patients with treatment resistant depression (47 female, 30 male)
- 40 had comorbid anxiety disorder diagnosis.
- 28 terminated before 36 treatments (11 due to early positive response, 4 due to adverse reactions, 13 for other reasons)

### Safety:

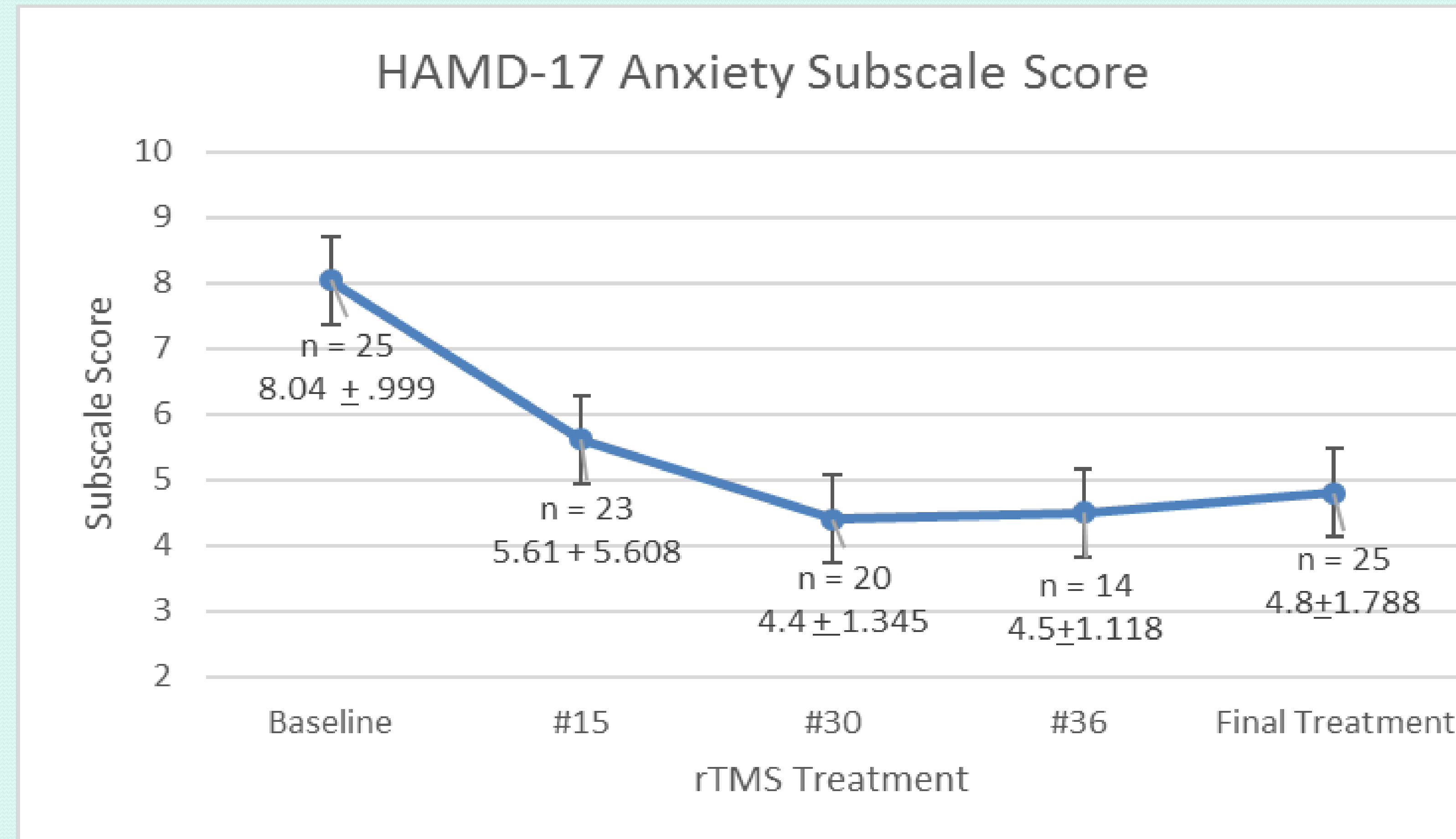
- Most commonly headache (53.2%) and site tenderness (42.7%) at some point during treatment, improved over time, did achieve motor threshold in all patients.
- No significant change on MoCA score from baseline.

## RESULTS (cont.)



### GAD-7

- Response rates (> 50% symptom reduction): 42%
- Remission rates (score < 5): 21%
- Reliable change index : 55%
- Clinically significant change: 49%
- Change from baseline (M=14.73, SD=3.151) to final treatment (M=9.62, SD=5.783) treatment was statistically significant;  $t(53)=-7.17, p < 0.001, d=0.956$



### HAMD Anxiety Subscale

- Response rates ( $\geq 50\%$  symptom reduction): 48%
- Remission rates (score < 7): 84%
- Reliable change index: 76%
- Clinically significant change: 48%
- Changes from baseline (M=8.04, SD=.999) to final treatment (M=4.8, SD=1.789) was statistically significant;  $t(24)=-8.43, p < 0.001, d=1.544$ .

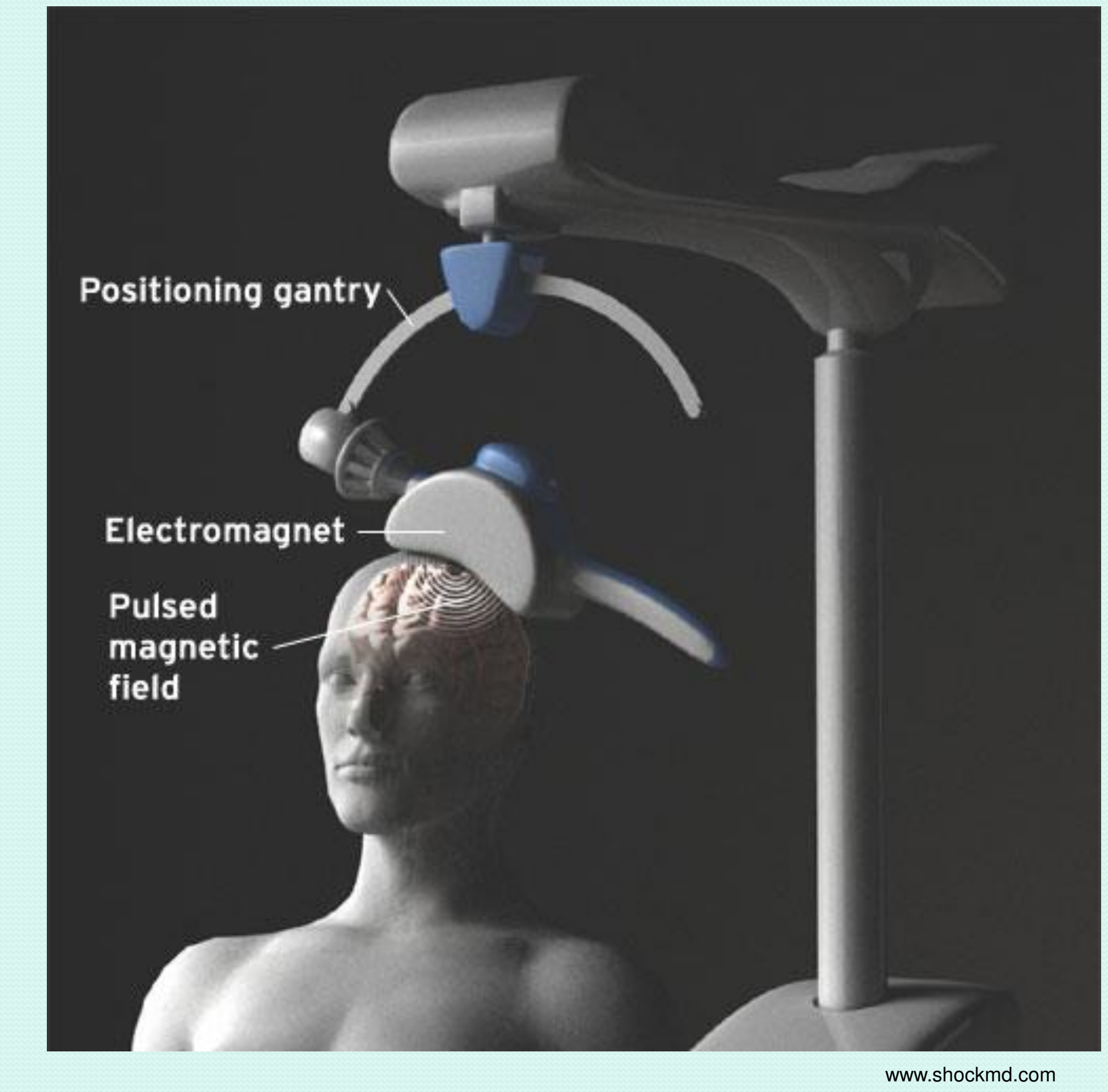
## DISCUSSION

### Study Strengths

- Meaningful statistical analysis
- Real-world study
- Clinical need for anxiety treatment in TRD
- Easy to replicate and translate into practice

### Study Limitations

- Reliability of HAMD Anxiety Subscale has been questioned.
- Sample was Caucasian (92.2%).
- Adjustments to psychotropic medications were allowed.
- Participants may have benefitted from supportive interactions with TMS nurse.



## CONCLUSION

Based on GAD-7 and HAMD Anxiety Subscale Ratings, multiple metrics including response, remission, RCI, and CSC along with large, statistically significant treatment effect sizes support the notion that anxiety symptoms improve from Left DLPC rTMS treatment in patients with treatment resistant depression.

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