



# Rapid and Longitudinally Sustained Antidepressant Effects of Ketamine-Assisted MBCT for Treatment-Resistant Depression

Wenfei Yu<sup>1</sup>, Arushi Badola<sup>1</sup>, Sophie Lazarus, PhD<sup>1</sup>, Anne-Marie Duchemin, MD<sup>1,2</sup>, Subhdeep Virk, MD<sup>1,2</sup>, Valeria Esis<sup>1,2</sup>, Anthony King, PhD<sup>1</sup>

<sup>1</sup>Department of Psychiatry and Behavioral Health, The Ohio State University, <sup>2</sup>Harding Hospital, The Ohio State University Wexner Medical Center

## Background

- Treatment-resistant depression affects about 44% of patients who have tried at least two consecutive antidepressant therapies.
- Ketamine is a NMDA receptor antagonist that offers rapid antidepressant effects; however, its benefits are often short-lived.
- Mindfulness-Based Cognitive Therapy (MBCT) prevents relapse in depression by redirecting focus from negative thoughts and reducing distress.

## Methods

- Study Design:** an 8-week Mindfulness-Based Cognitive Therapy (MBCT) program, with participants attending weekly 2-hour virtual group sessions and completing daily home mindfulness practices.
- An IV ketamine infusion (0.5 mg/kg) was administered between weeks 2 and 3, and completed Mystical Experiences Questionnaire (MEQ), followed by three “booster” mindfulness sessions.
- Participants completed weekly self-report measures (PHQ-9), clinician-administered interviews (MADRS), EEG, Blood Draw, and Ecological Momentary Assessments (EMA).

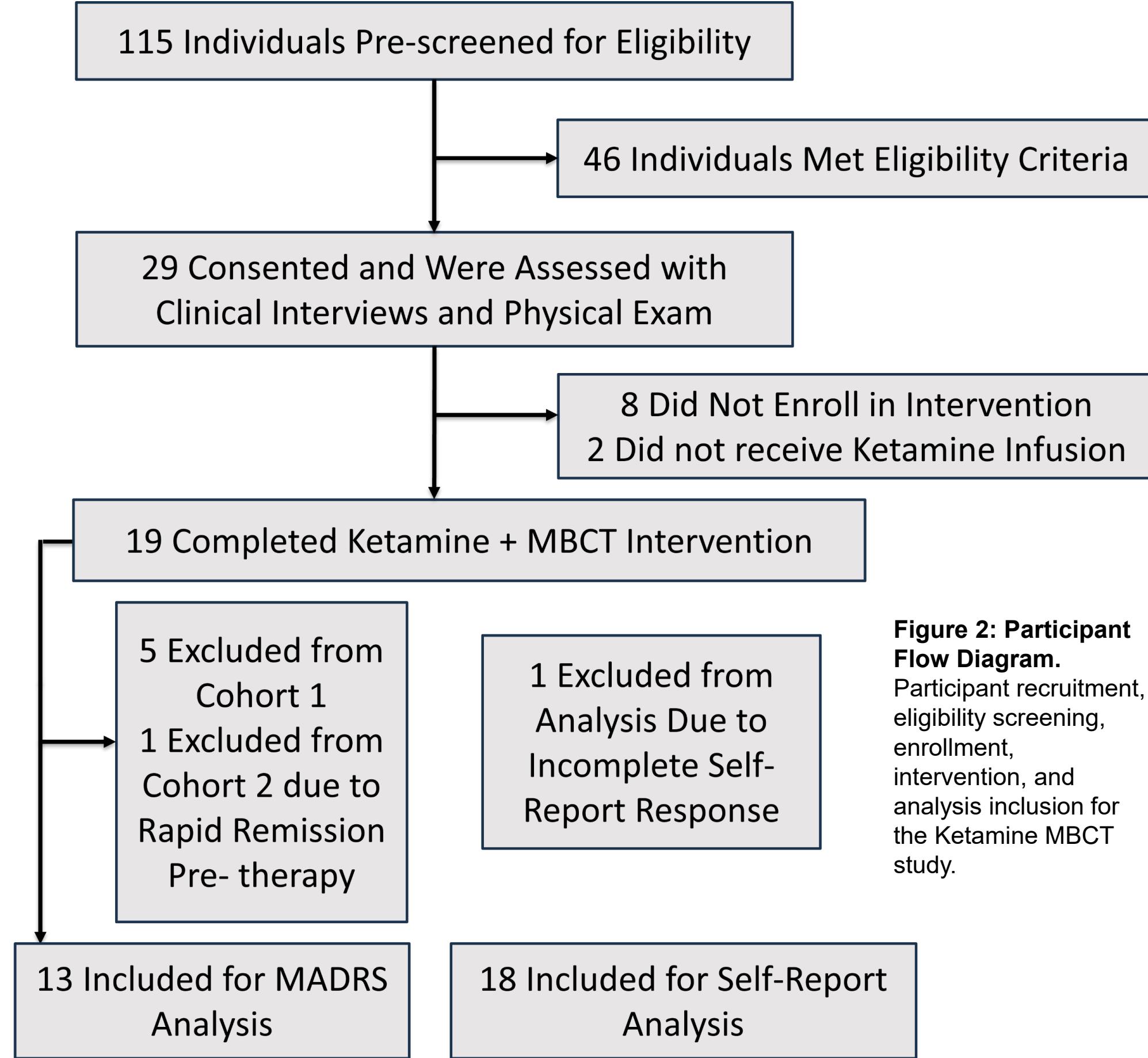
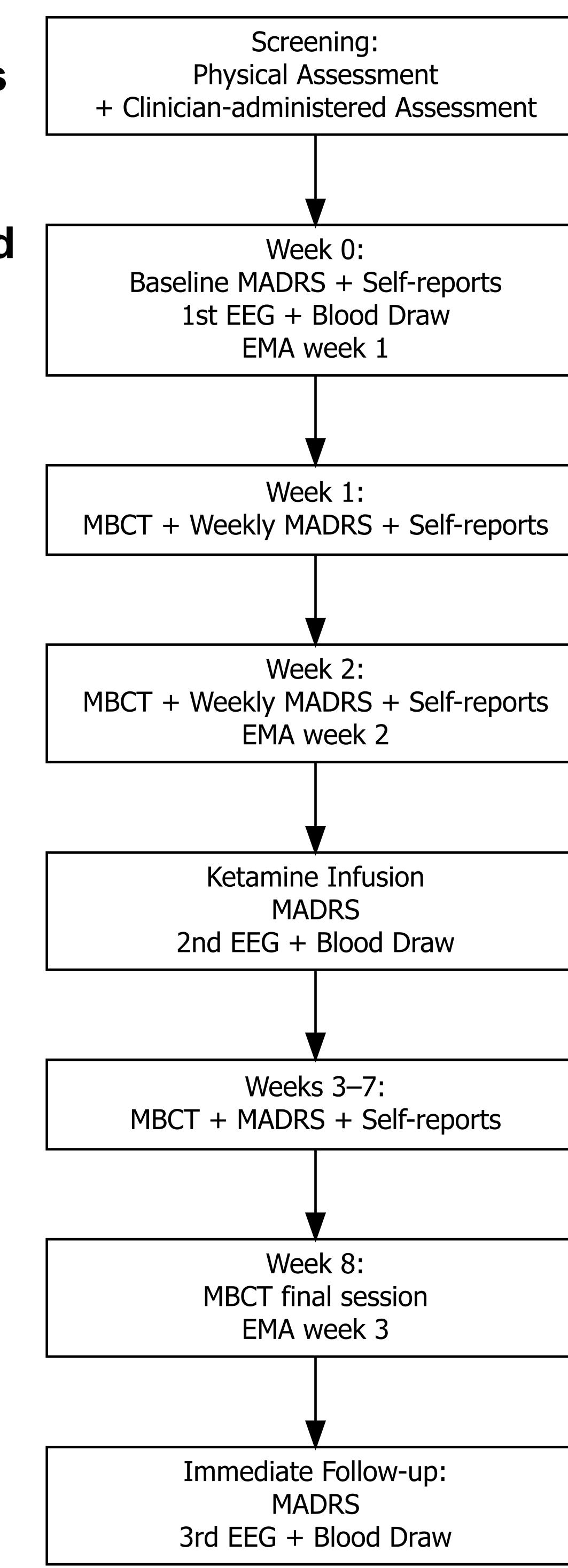


Figure 2: Participant Flow Diagram.  
Participant recruitment, eligibility screening, enrollment, intervention, and analysis inclusion for the Ketamine MBCT study.

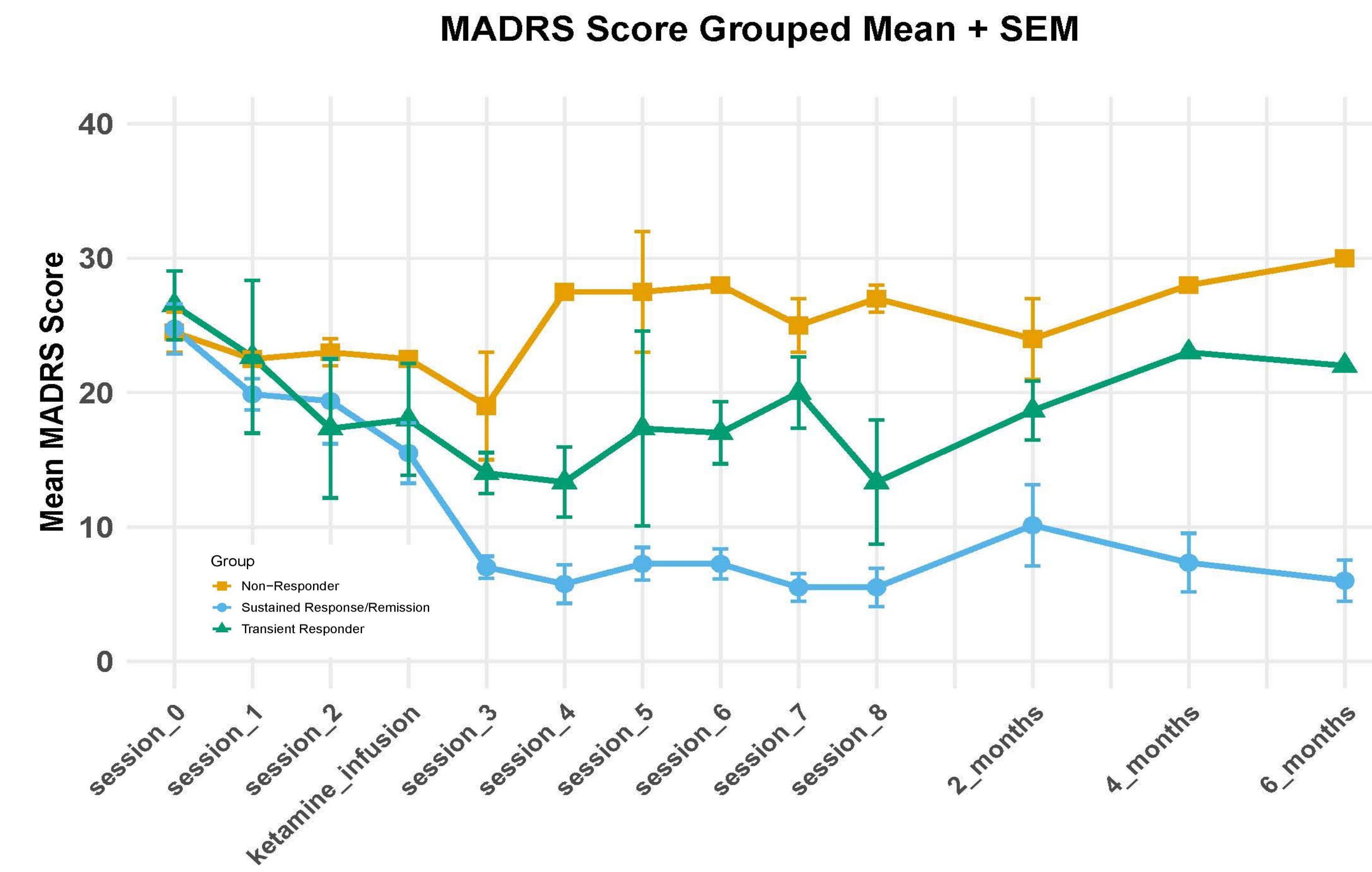


## Discussion

- MBCT extended antidepressant effect of a single ketamine infusion in most participants to 6 weeks or longer, rather than typical time course of depression relapse in 1-2 weeks
- Combining Ketamine and MBCT may produce a fast-acting and sustained antidepressant response for TRD.
- In future studies, we aim to replicate these findings across multiple groups and investigate enhanced metacognitive regulation in the PCC and dlPFC regions using fMRI.

## Results

- 29 participants enrolled, 19 completed MBCT group therapy. Only 18 participants were included in analysis due to dropouts and incomplete assessment collection.
- MADRS scores reflect experiences in the past one week, PHQ-9 scores reflect experiences in the past two weeks, FFMQ-15 scores reflect mindfulness in daily life, these 3 scales are used as primary outcome measures.
- Cohort 2 & 3 participants are grouped based on change in MADRS score after ketamine infusion, cohort 1 participants are grouped based on change in PHQ-9 scores.
  - Sustained Responders / Remission (N=12)
  - Transient Responders (N=3)
  - Non-Responder (N=3)
- N=10 reached criteria of remission (MADRS  $\leq 10$ , PHQ-9  $< 5$ ) at the end of therapy, N=8 remained in remission at follow-ups.
- MEQ scores predicted acute Ketamine effects post infusion and combined K+MBCT effects post therapy.



Baseline Characteristics	N	%
Gender		
Female	14	77.8
Male	4	22.2
Race		
White	15	88.3
Black / African American	2	11.1
Asian / Asian American	1	5.6
Mean SD		
Age	38.9	10.1
MADRS	27.6	4.3
PHQ-9	14.8	3.9

Table 1:  
Participants Demographics  
This table represents the participants demographics information, including Age, Gender, Race, and intake scores for MADRS and PHQ-9.

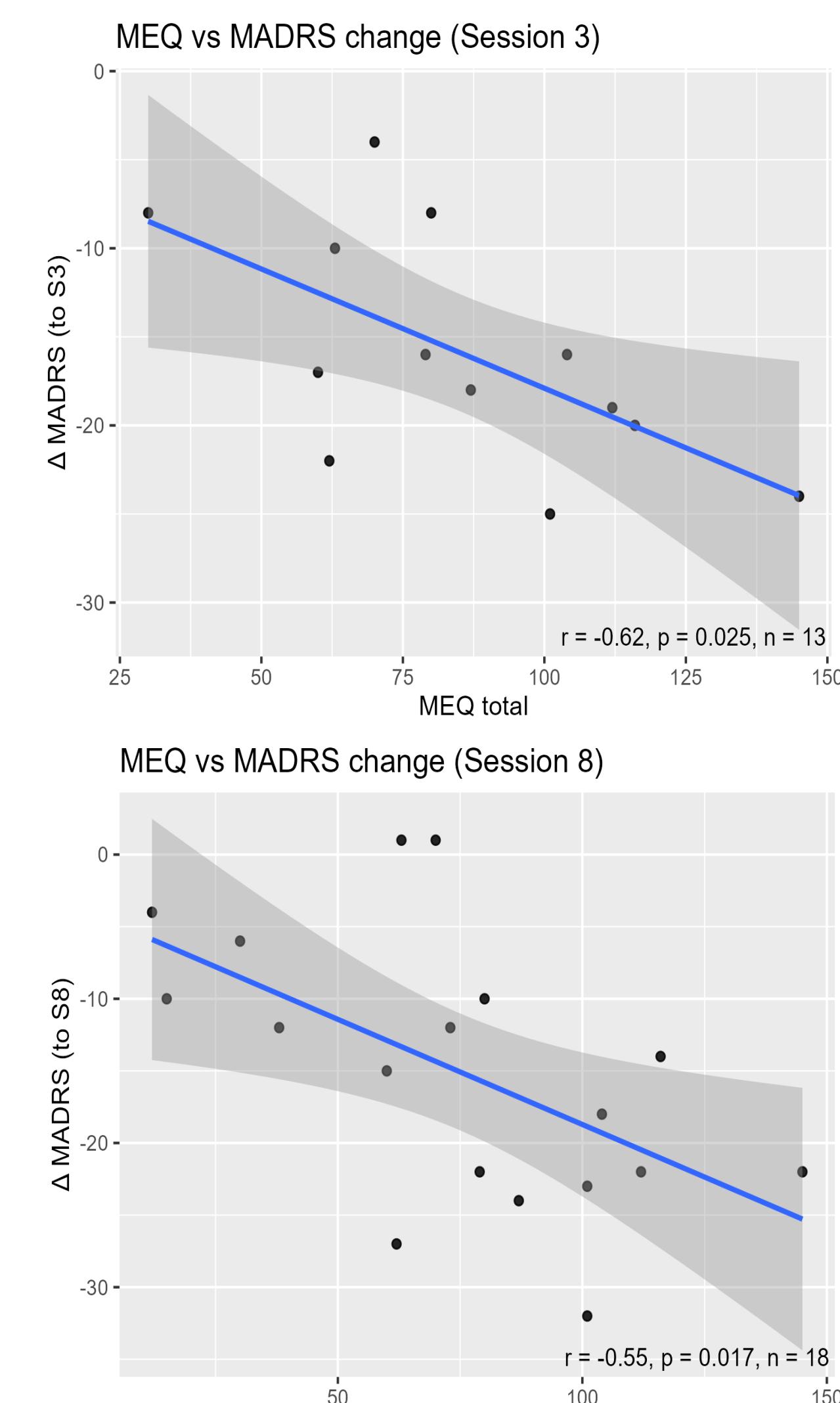


Figure 4: Trends in PHQ-9 Scores by Response Type (Cohort 1 + 2 + 3)

