

Characterizing Cognitive and Neuropsychological Outcomes Following Pediatric Hemispherectomy

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Background

- Following pediatric hemispherectomies, seizures are generally controlled,¹ but effects on *cognitive function* are not always clear

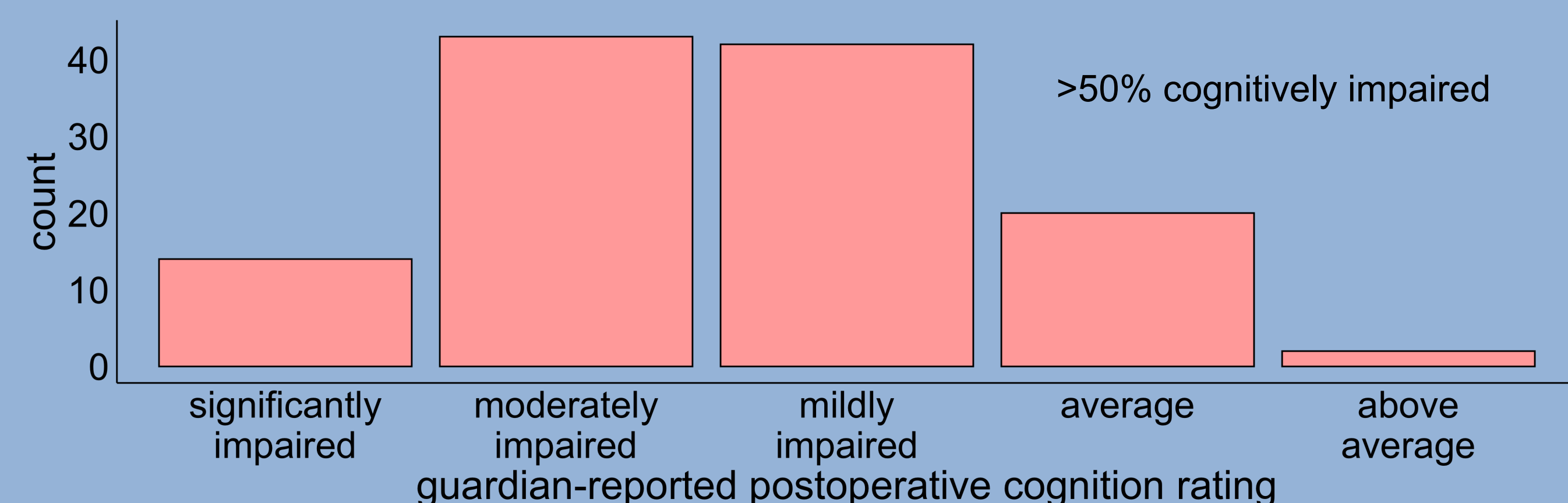
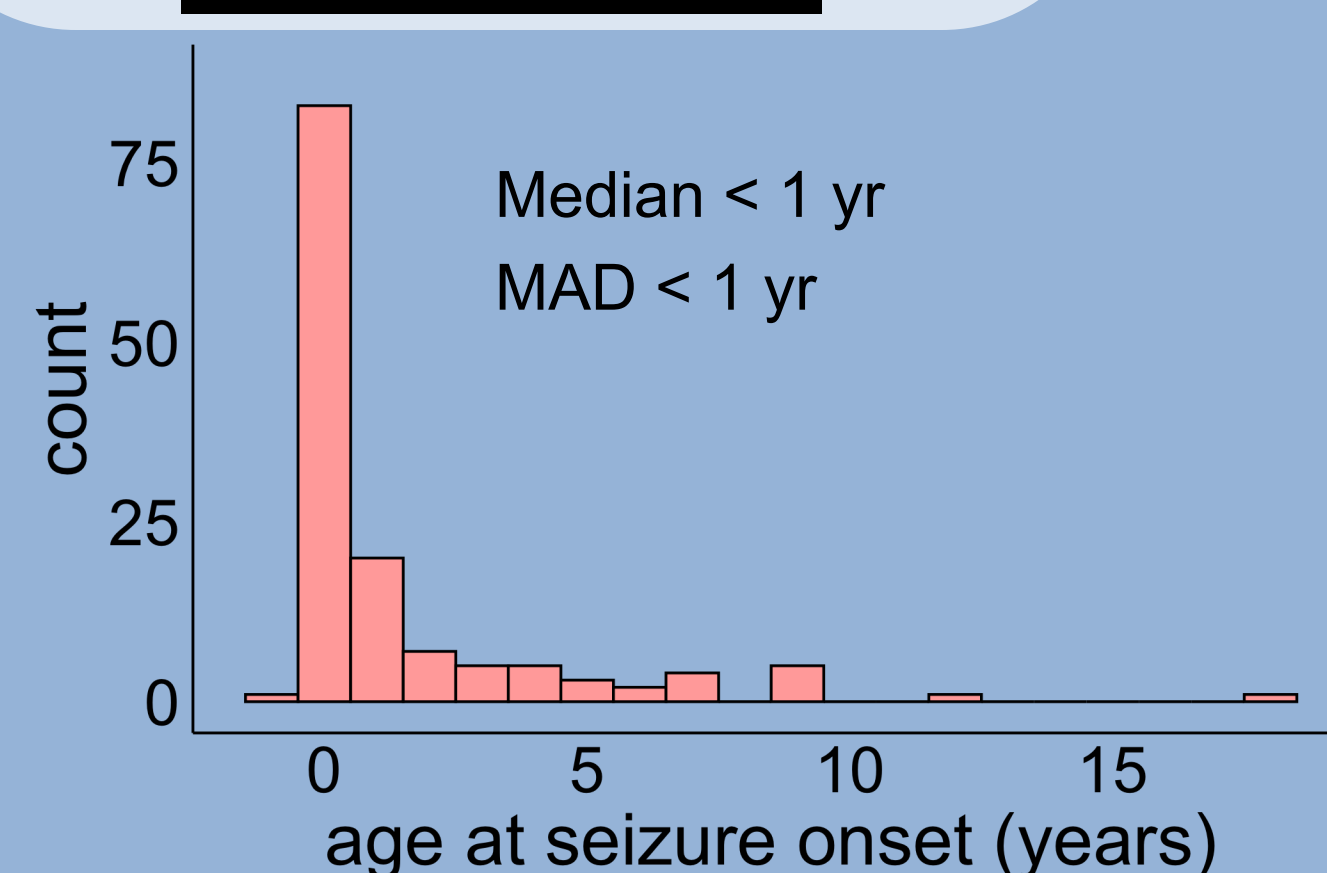
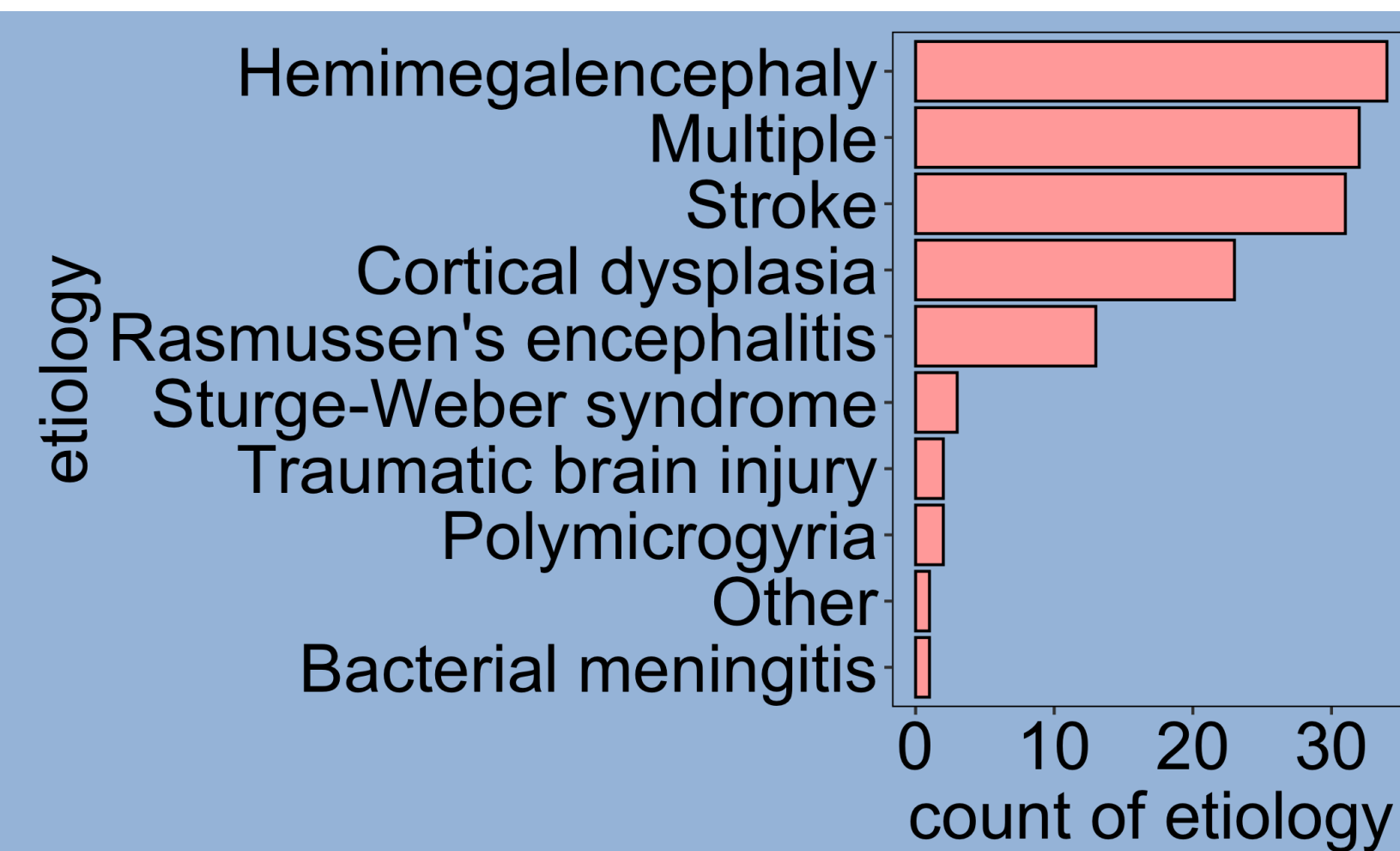
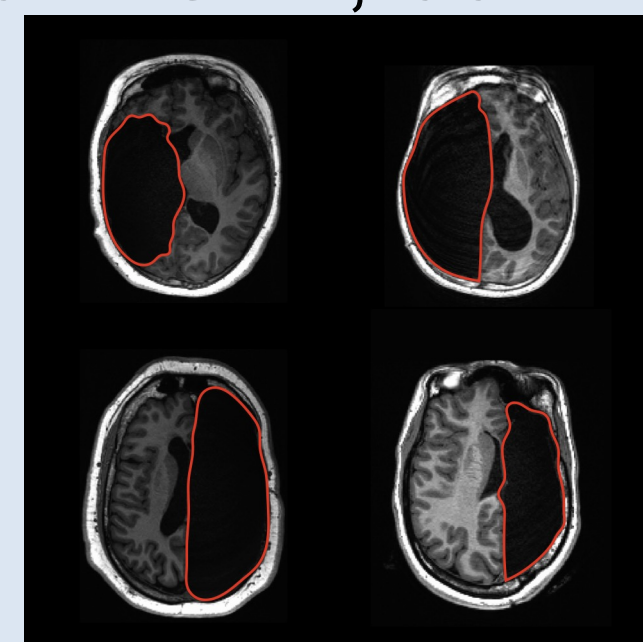
- Plasticity of the developing brain may confer positive cognitive outcomes²

Study Objectives:

- Determine whether post-hemispherectomy cognitive outcomes can be predicted from:
 - Age at seizure onset
 - Age at surgery
 - Side of resection (left vs. right)
 - Etiology
- Characterize the discrete post-hemispherectomy neuropsychological comorbidities and their respective predictors

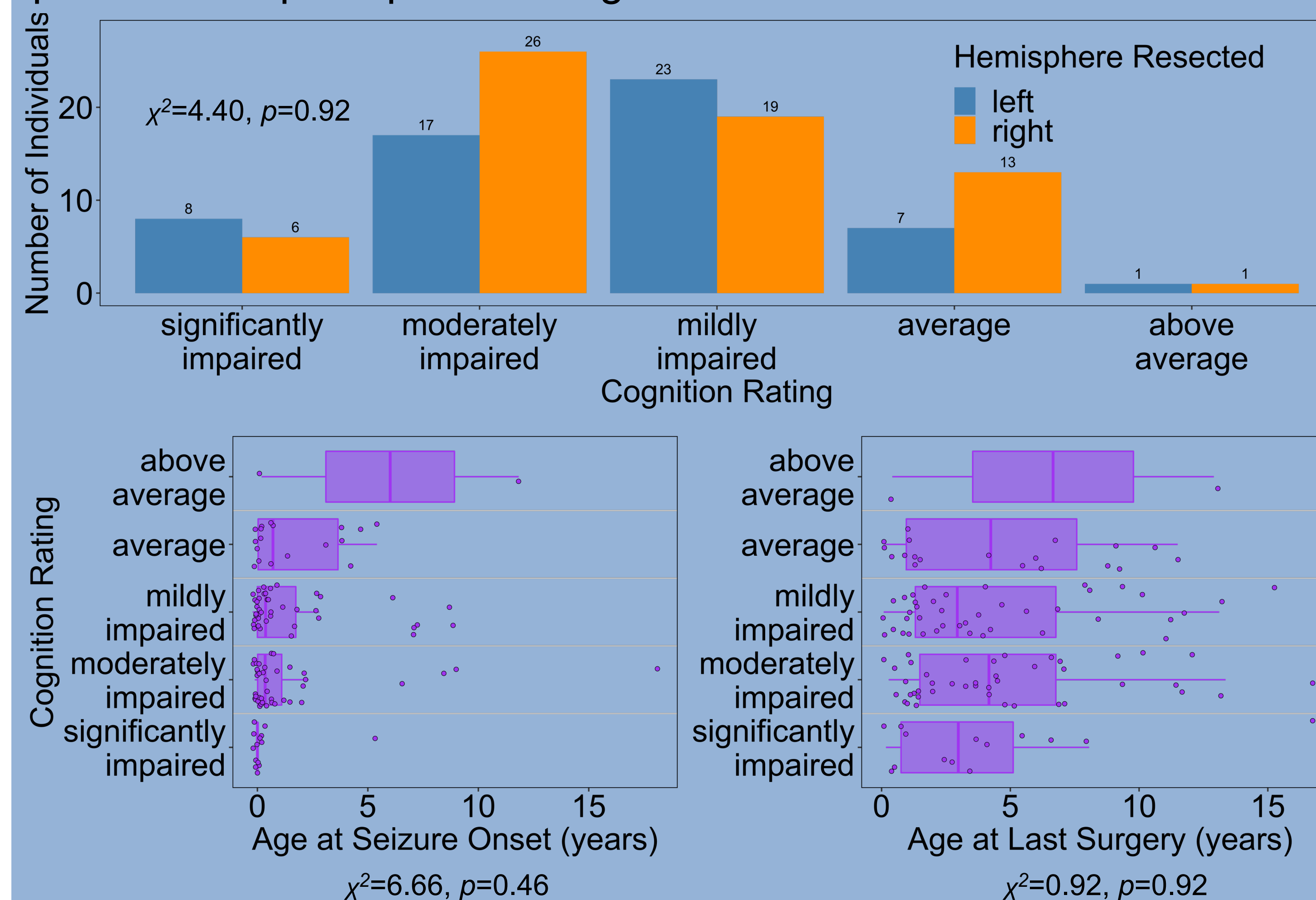
Global Pediatric Epilepsy Surgery Registry

Guardian-reported data were obtained ($n = 142$)
76 RIGHT, 66 LEFT

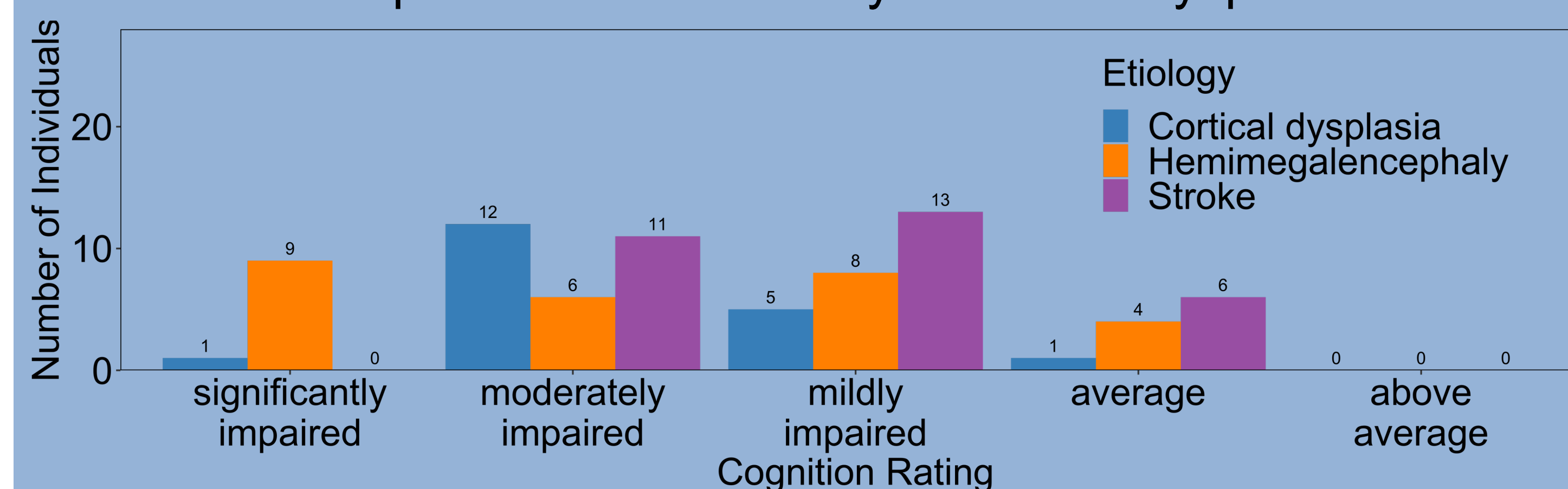


Predicting Cognitive Outcomes

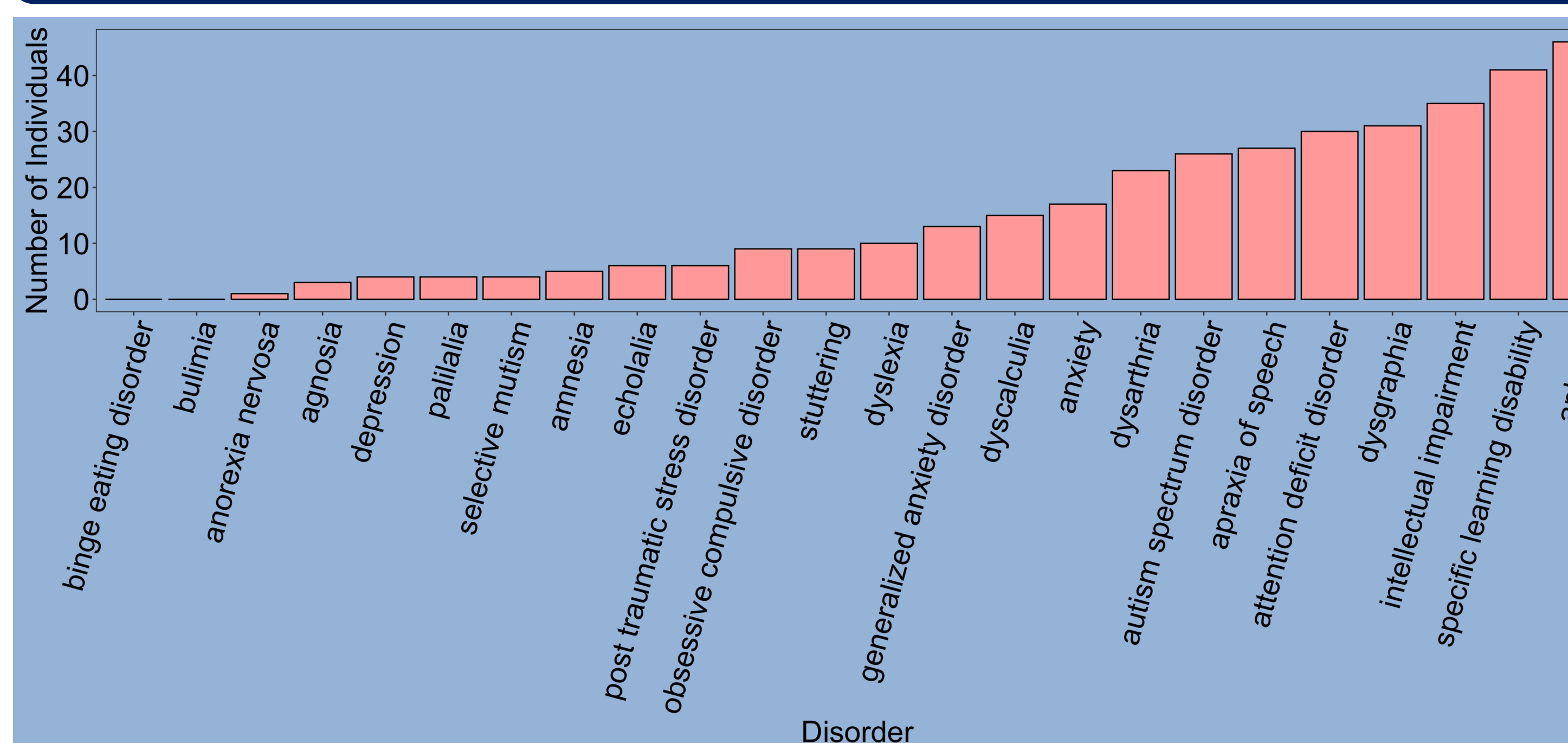
Side of resection, age at seizure onset, and age at surgery are not predictive of postoperative cognitive outcome



Patients with history of stroke appear to have better post-op outcomes than patients with a history of cortical dysplasia



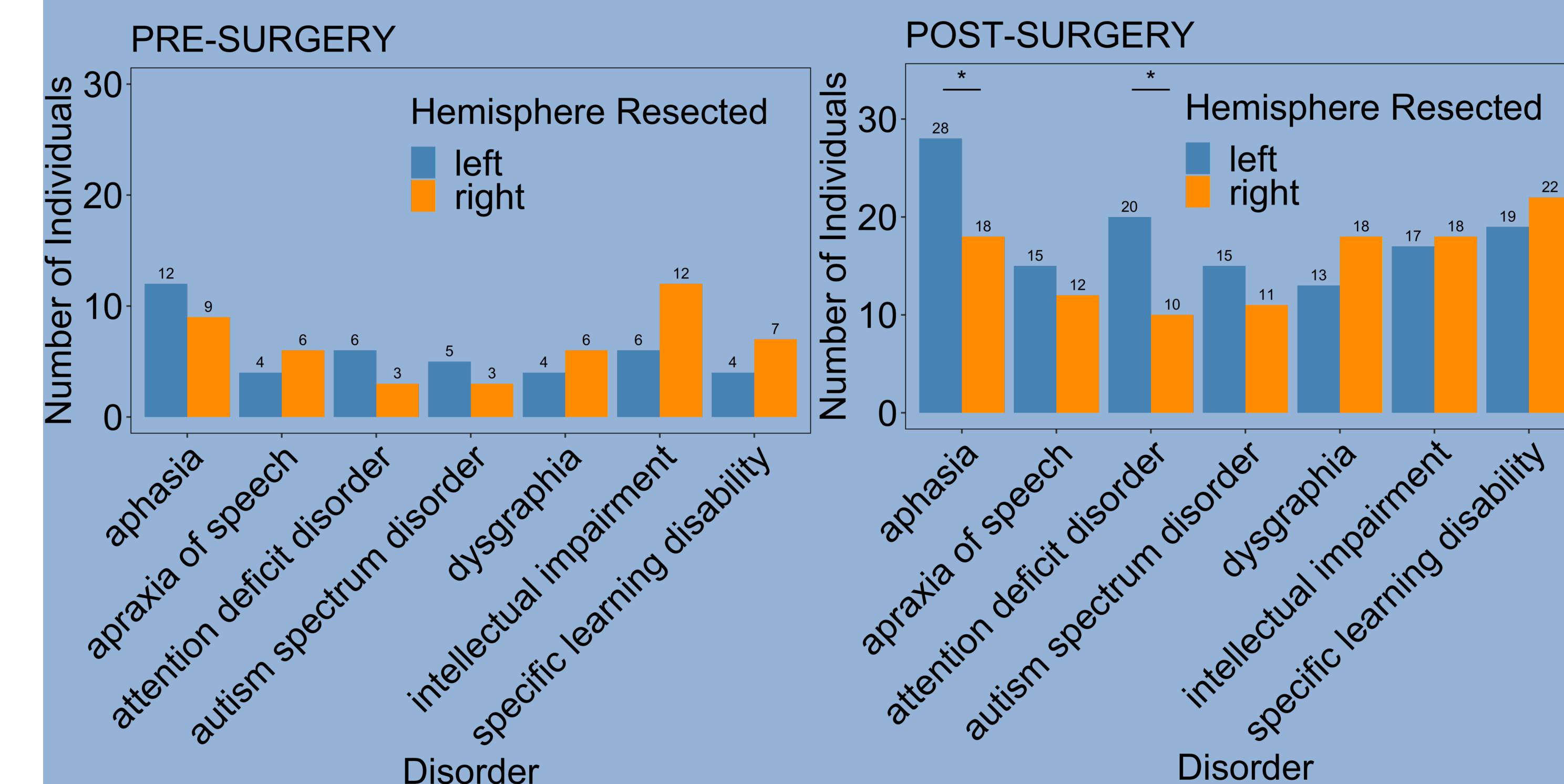
Characterizing Neuropsychological Outcomes



Predicting Neuropsychological Outcomes

Left hemispherectomy is associated with greater likelihood of aphasia and attention deficit disorder than right hemispherectomy

Note: aphasia and ADD did not differ between left and right resection groups pre-surgery



Conclusions

- Age at seizure onset, age at surgery, and side of resection do not predict cognitive outcome following hemispherectomy
- Patients with stroke show better cognitive outcomes than patients with cortical dysplasia
- Most common post-op neuropsychological outcomes include: aphasia, autism, ADD, apraxia of speech, dysgraphia, intellectual impairment, and specific learning disability
- Left hemispherectomy confers greater risk of aphasia and ADD than right hemispherectomy
 - Possibly due to competition for language in right hemisphere
- For more details, please stop by **Platform E (12/4 3:45-4:00pm)**

Acknowledgments and References

Acknowledgments

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References

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