

# Clinical Predictors of Alternate Level of Care within Inpatient Mental Health Settings across Ontario

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# Introduction

## Alternate Level of Care

- A patient is designated as ‘ALC’ when they no longer require the services of their current care setting, but continue to remain in that setting while they await discharge
- ALC patient days are an inefficient use of system resources and may prevent access to care for other system users
- Additionally, ALC may reduce patients’ quality of life and satisfaction with the health system

## ALC Statistics

- According to a report released by Cancer Care Ontario (CCO) – *Access to Care (CCO-ATC)*, in November 2015:
  - 14% of all inpatient bed days in Ontario were ALC days
  - Of all the ALC patients waiting in post-acute care, 10% were mental health inpatients
  - Within inpatient mental health units specifically, 10% of beds were occupied by patients with an ALC designation

## Study Purpose

- 1. Determine the proportion of patient episodes that have been designated ALC over time, as well as the distribution of ALC days among designated patients
- 2. Describe the clinical characteristics of patients who are designated ALC
- 3. Identify risk factors for ALC status at the time of admission

# Methods

## Data Sources for ALC

- Primary source of data for this project was the Resident Assessment Instrument – Mental Health (RAI-MH)
  - 2005-2014
- Secondary source of data for this project was the Wait Time Information System (WTIS) database
  - 2011-2013
- RAI-MH and WTIS data were linked using patient and episode ID

## Study Sample

- Forensic & short-stay patients removed
- Admission assessments analyzed from each patient episode
  - Single patient may be represented in the analysis more than once
- January 1<sup>st</sup> 2011 – March 31<sup>st</sup> 2013
- Overall sample = 76,184 admission episodes
  - 1.2% long-stay ALC patients (30+ days)



## Variable Selection & ALC Cut-point

- Predictive variables chosen from RAI-MH based on previous research and clinical experience
- Predictive variables include:
  - Demographic characteristics
  - Clinical attributes
  - RAI-MH Scales & Clinical Assessment Protocols (CAPS)
- 30-day cut-point chosen for long-stay ALC status based on CCO guidelines & clinical utility

## Statistical Analysis

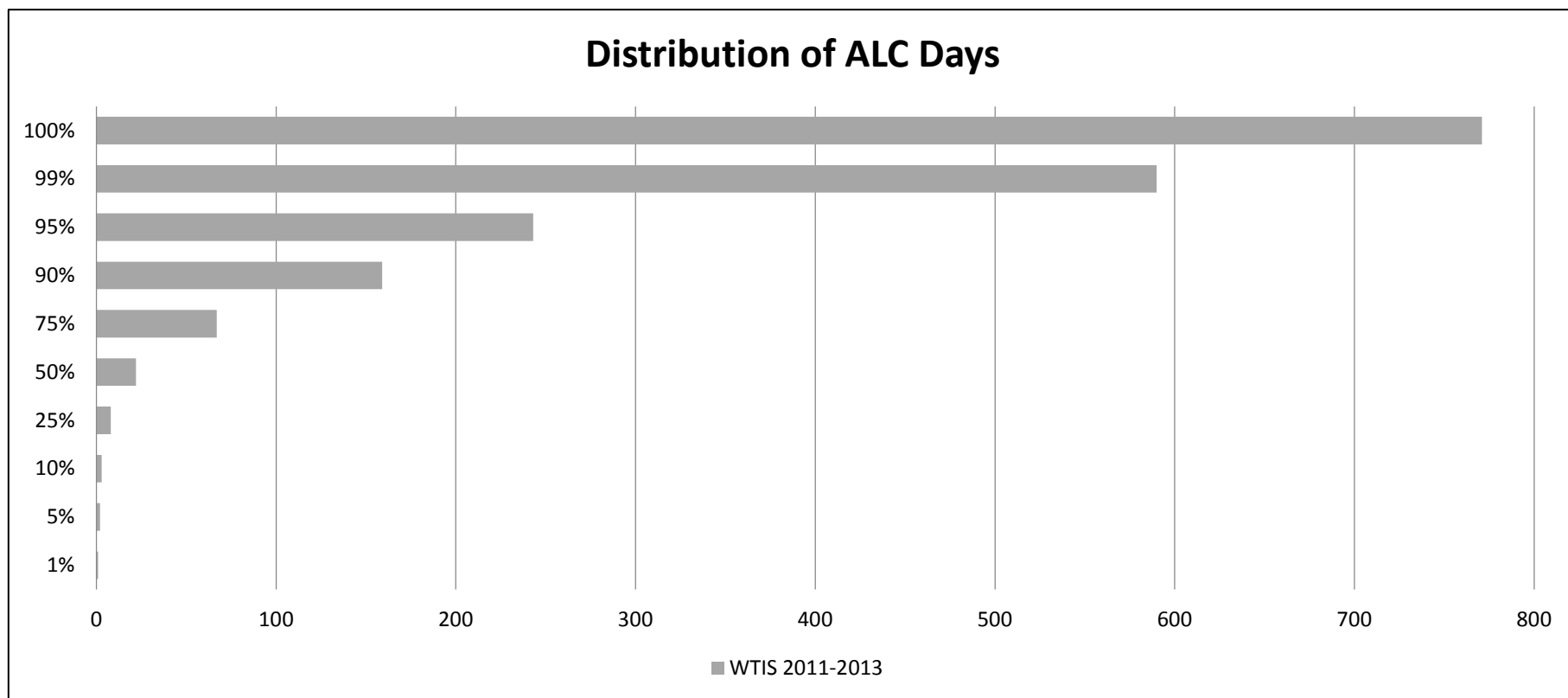
- Proportion of episodes with 30+ ALC days & percentile distribution of ALC days
- Multivariate logistic regression predicting 30+ ALC days
  - Odds Ratio
  - Anything above '1' = significantly, positively associated with ALC
  - Anything below '1' = significantly, negatively associated with ALC
  - Each variable is analyzed while holding all other variables constant

# Results

## Proportion of ALC Episodes with +30 and <30 ALC Days (2011-2013)

- Out of 76,184 patient episodes, 901 were identified in WTIS as having 30+ days of ALC
- Percentage of patient episodes classified as long-stay ALC = 1.2%

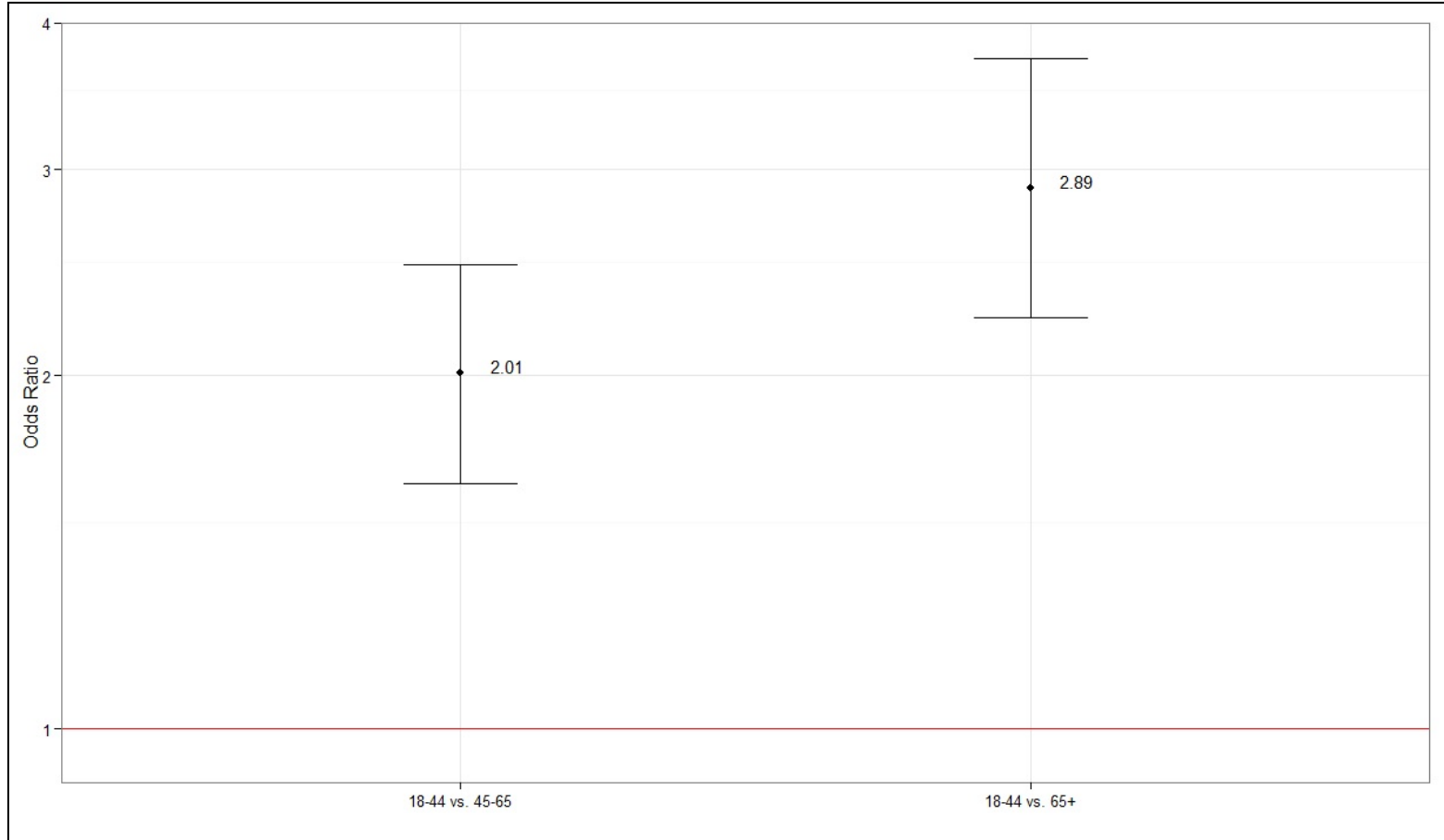
# Percentile Distribution of ALC Days



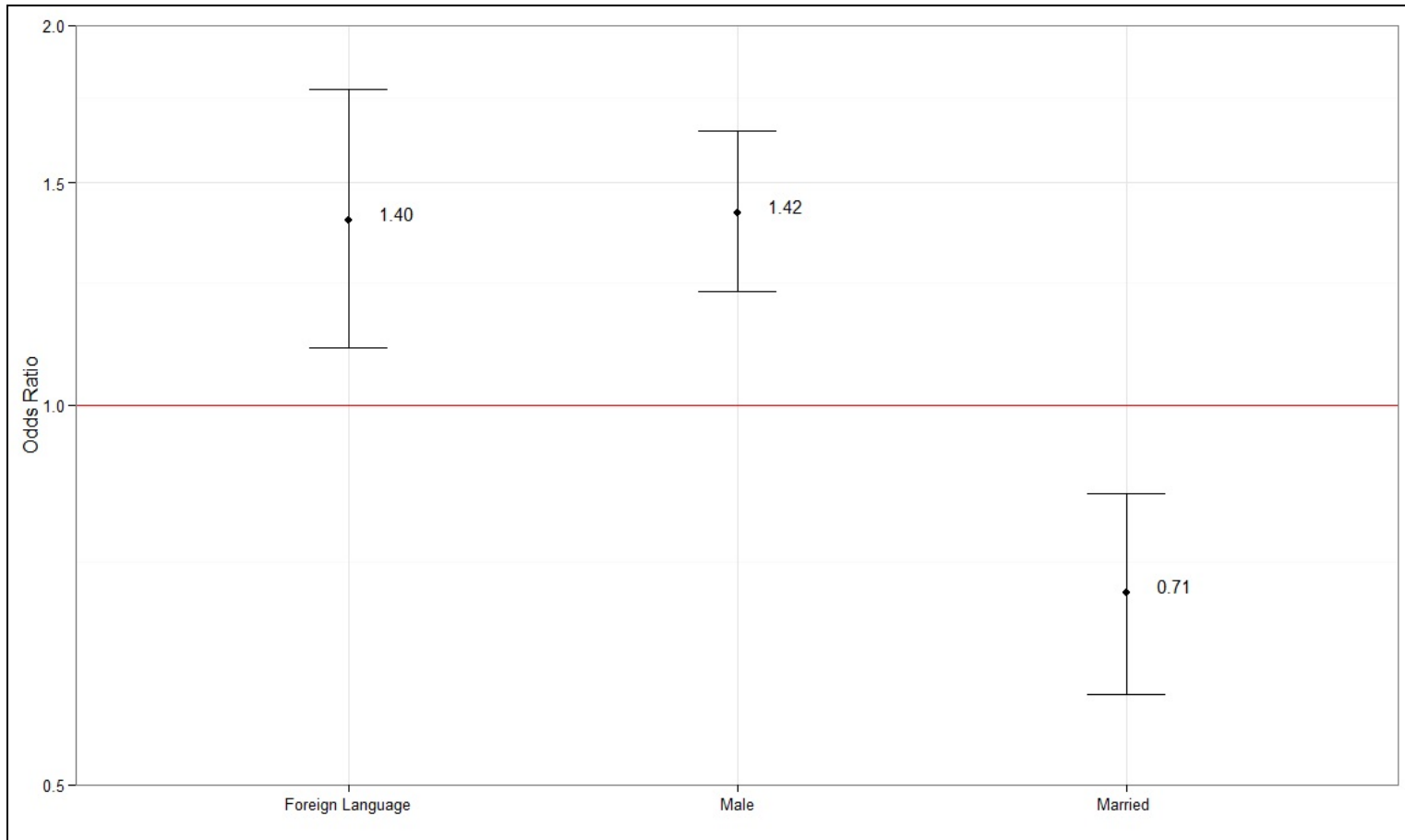
Mean = 60, SD = 100 ; Median = 22

# Multivariate Logistic Regression

# Age

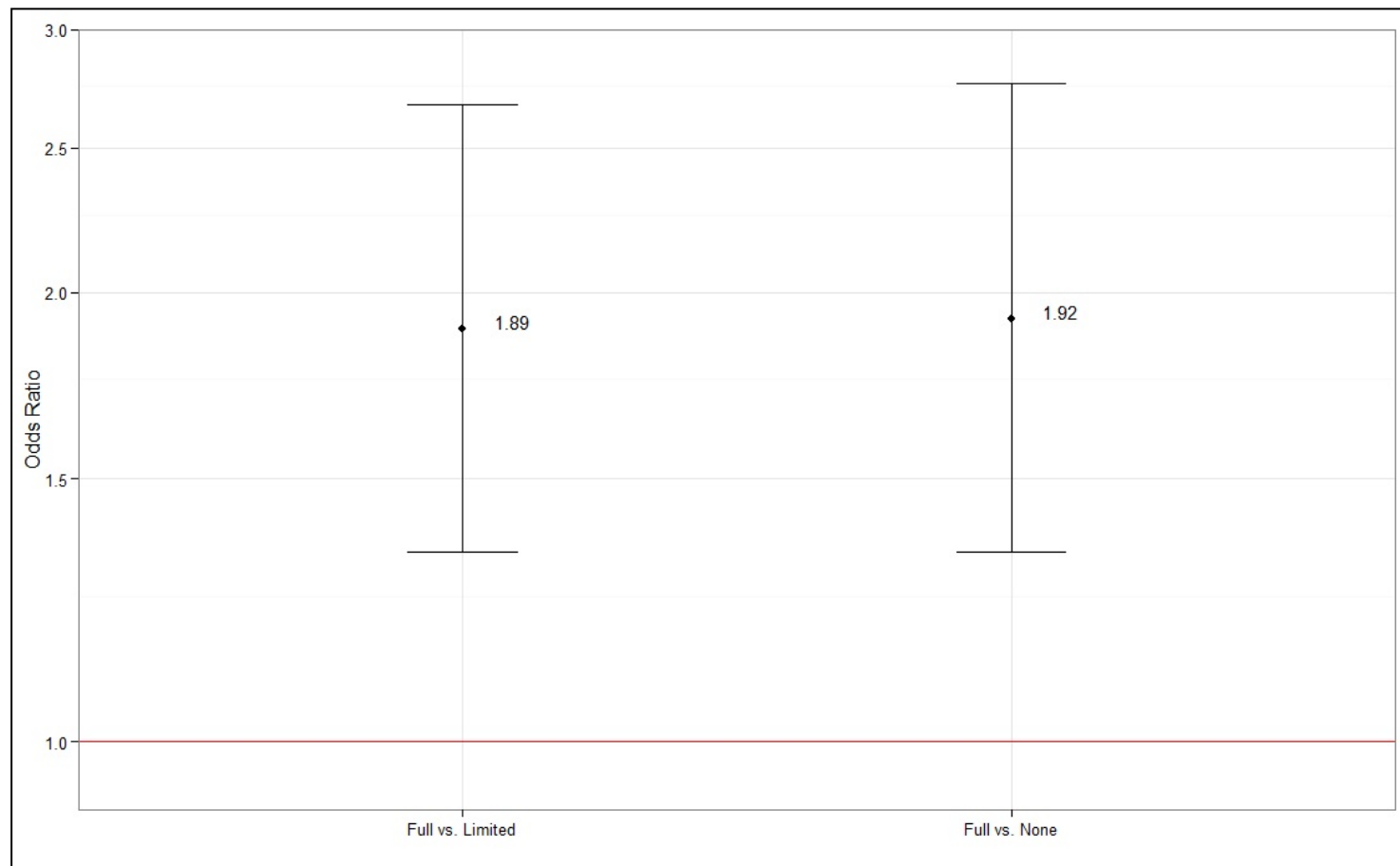


# Demographic Characteristics

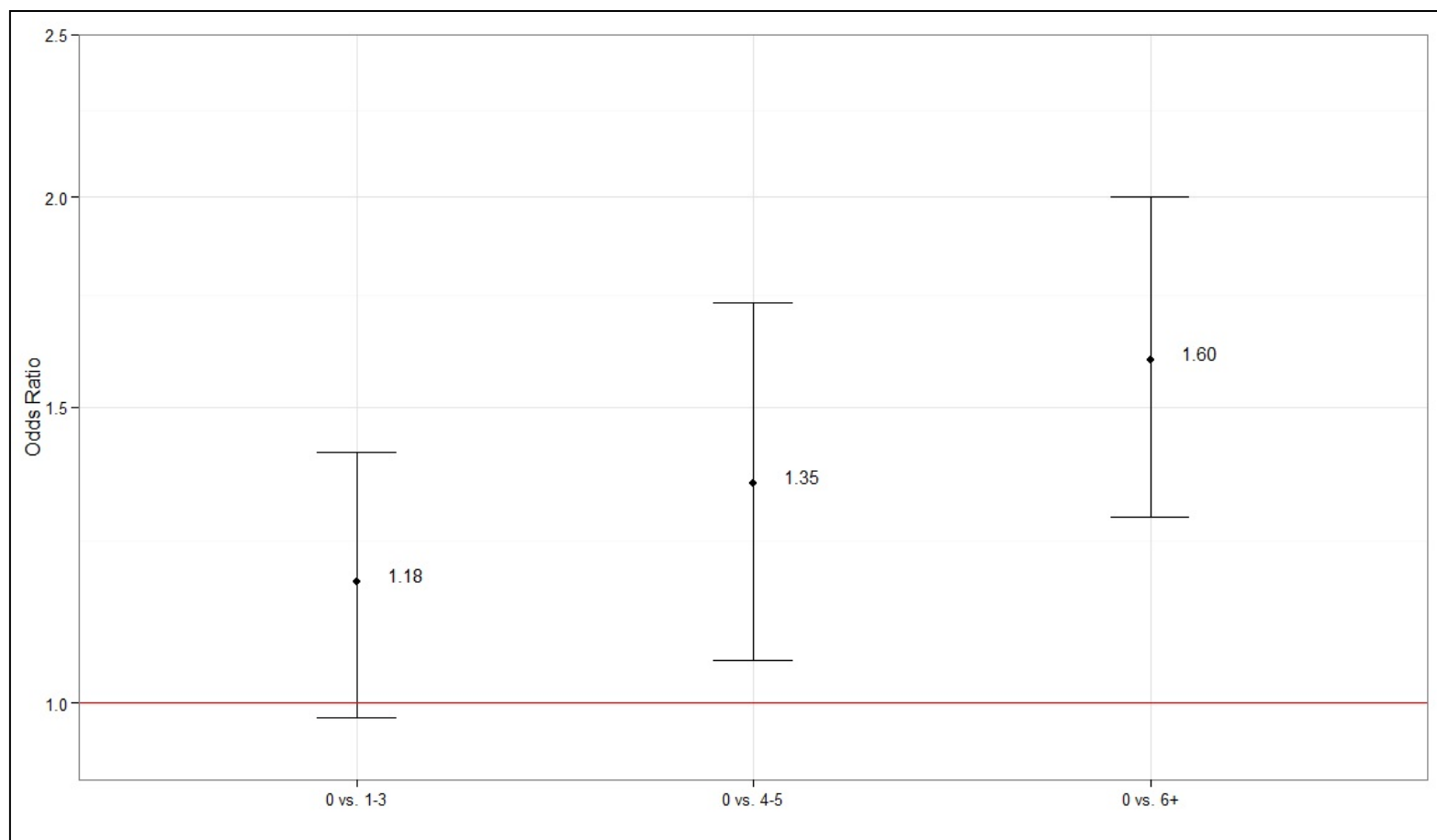




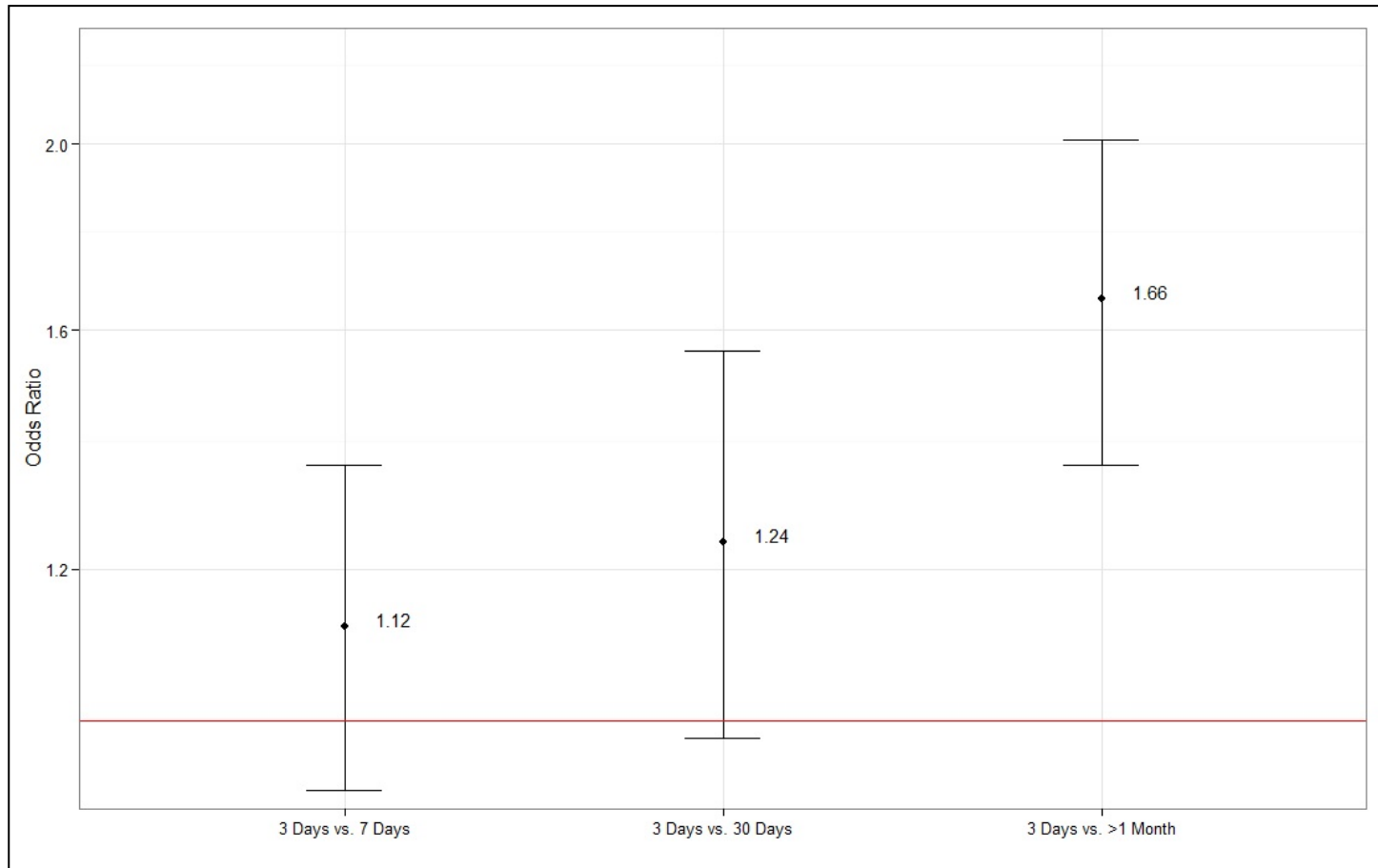
## Insight into Mental Health



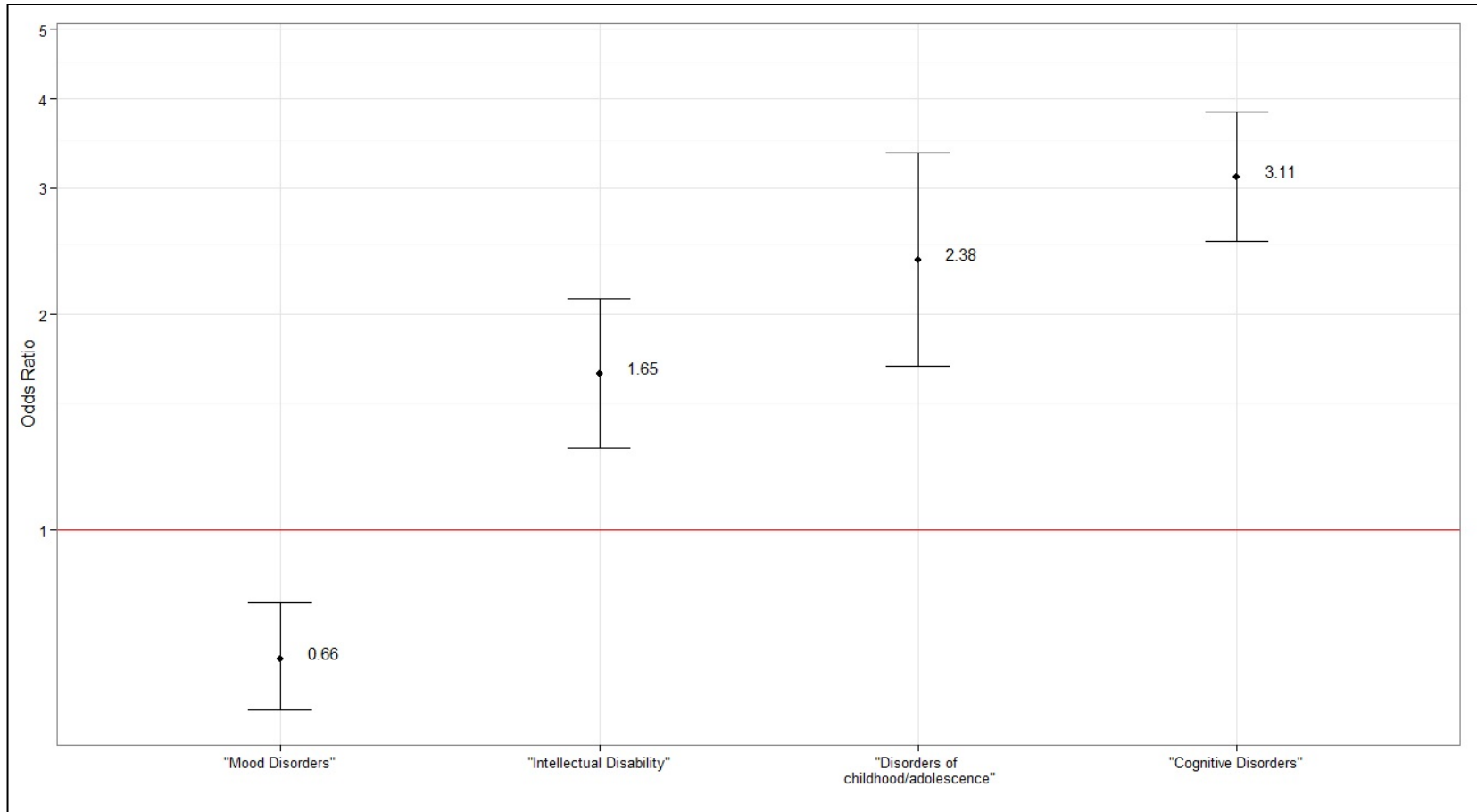
## Lifetime Admissions to a Psychiatric Hospital



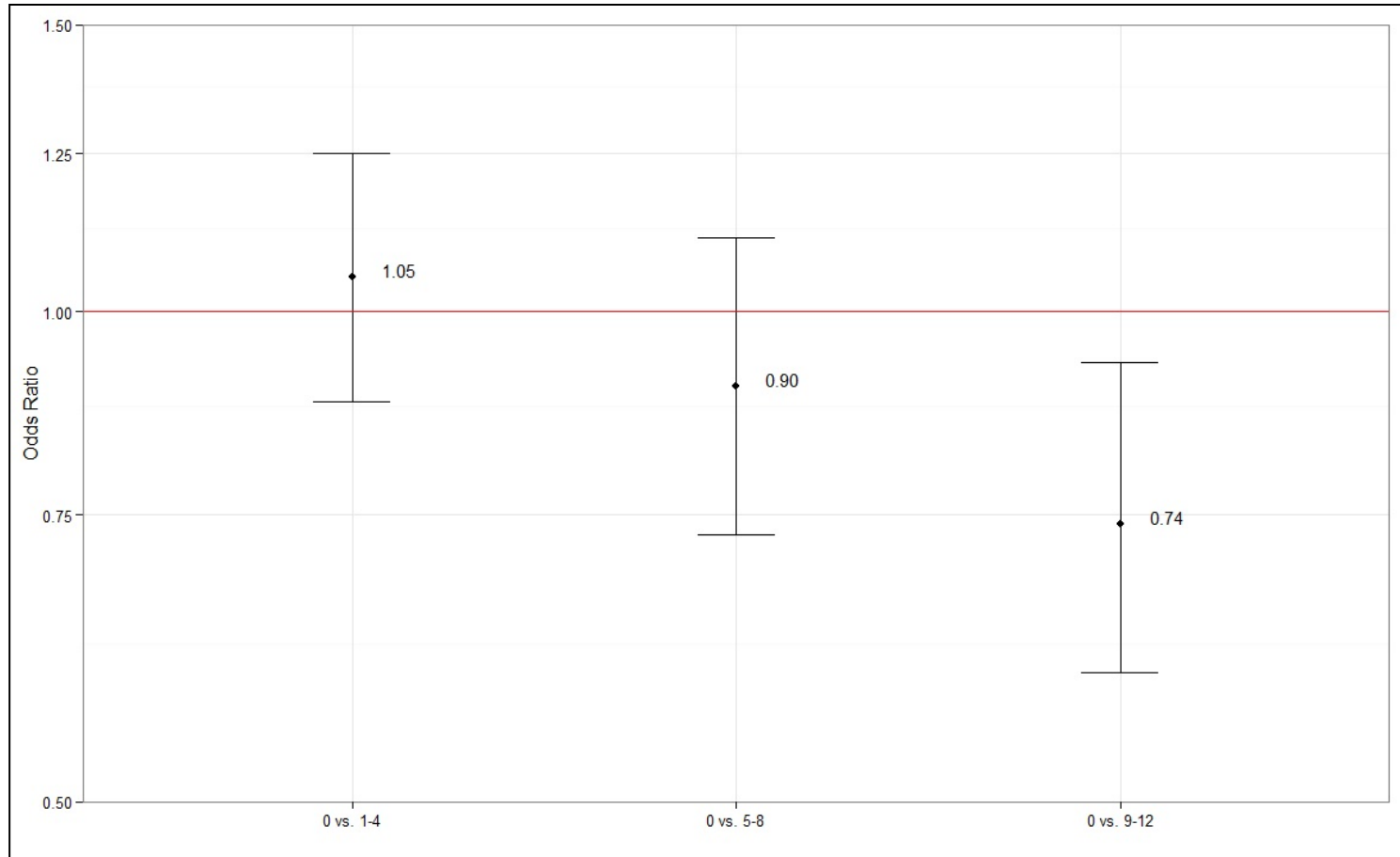
# Visit from a Social Relation



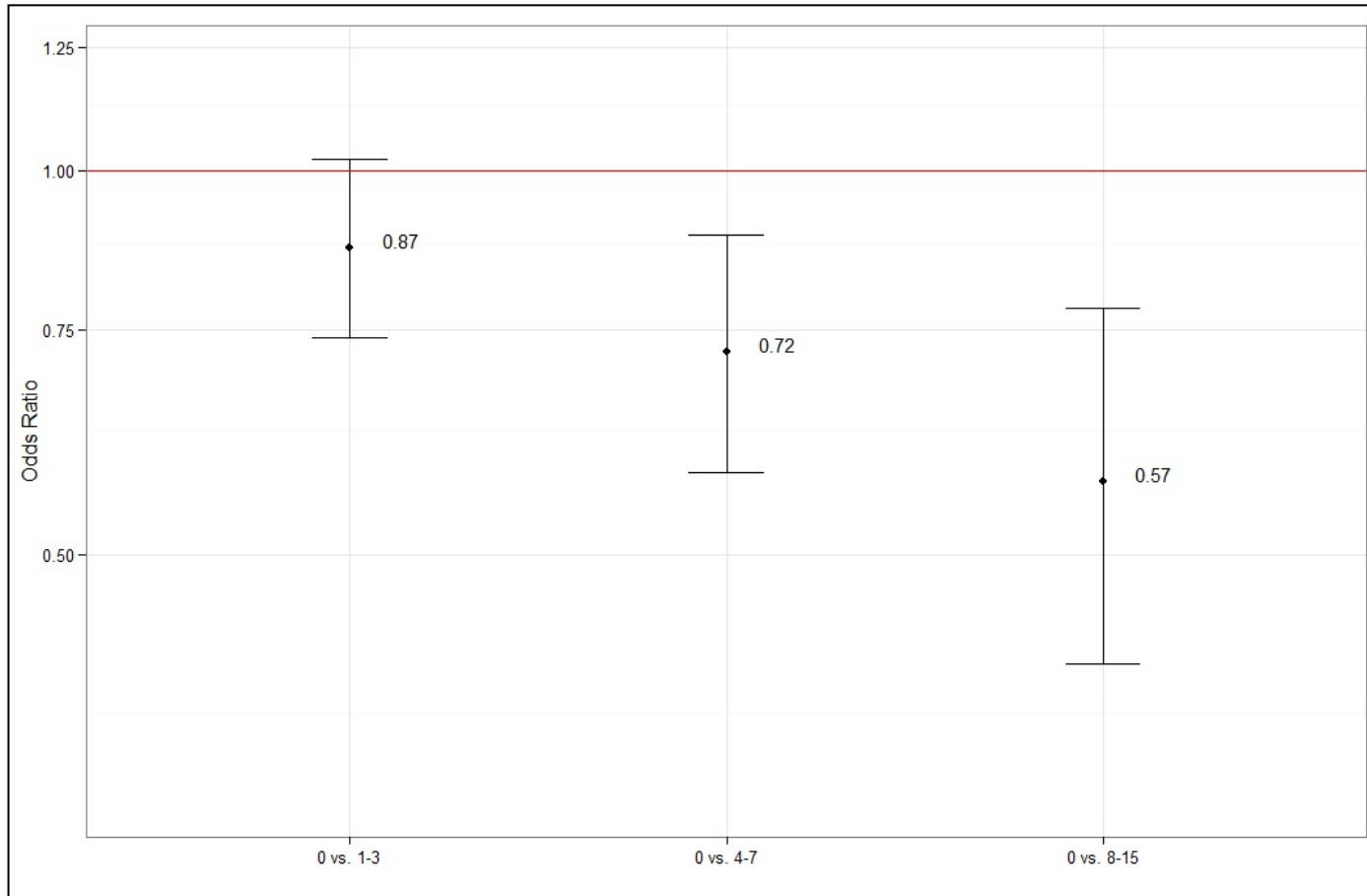
# Psychiatric Disorders



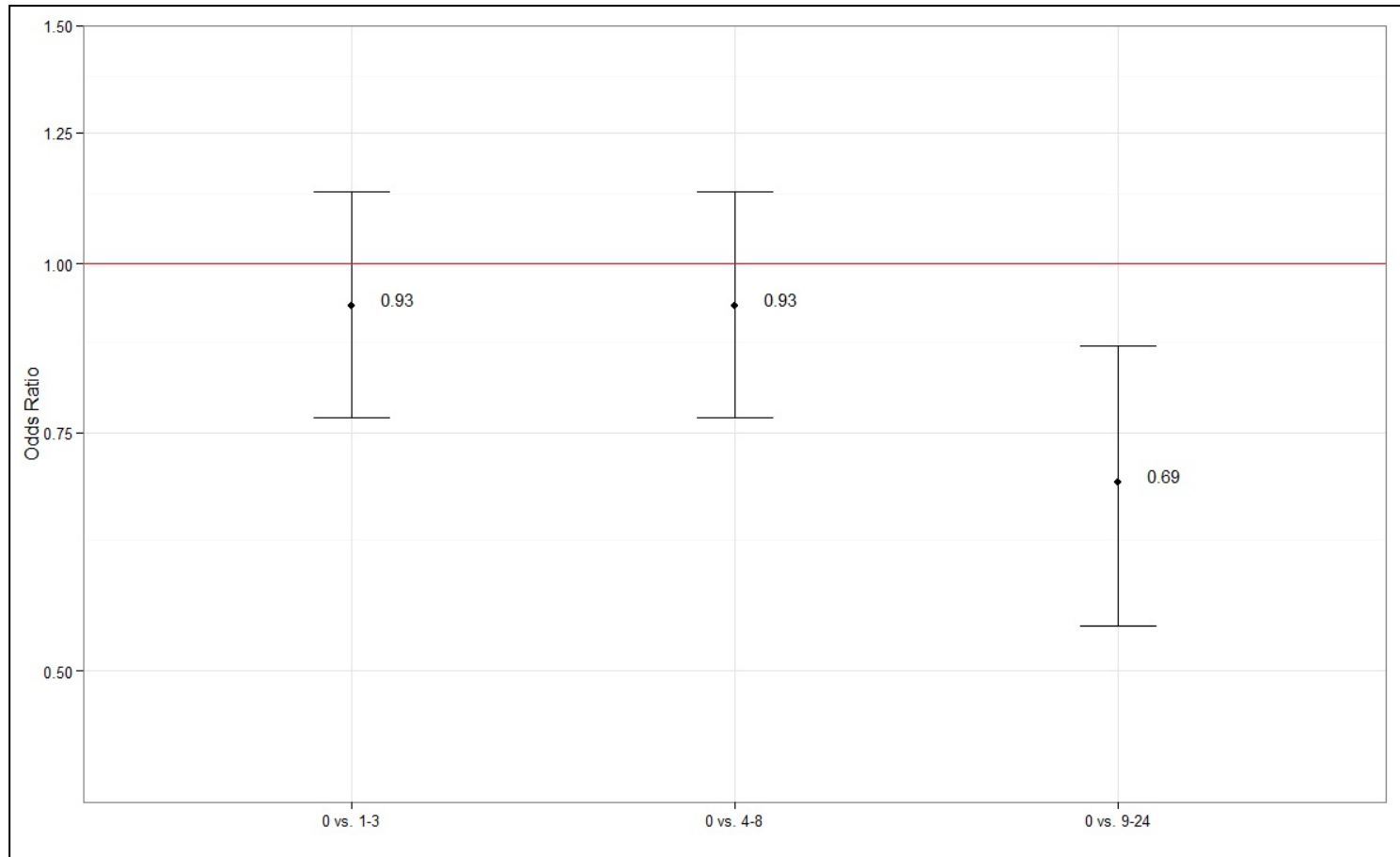
## Social Withdrawal Scale



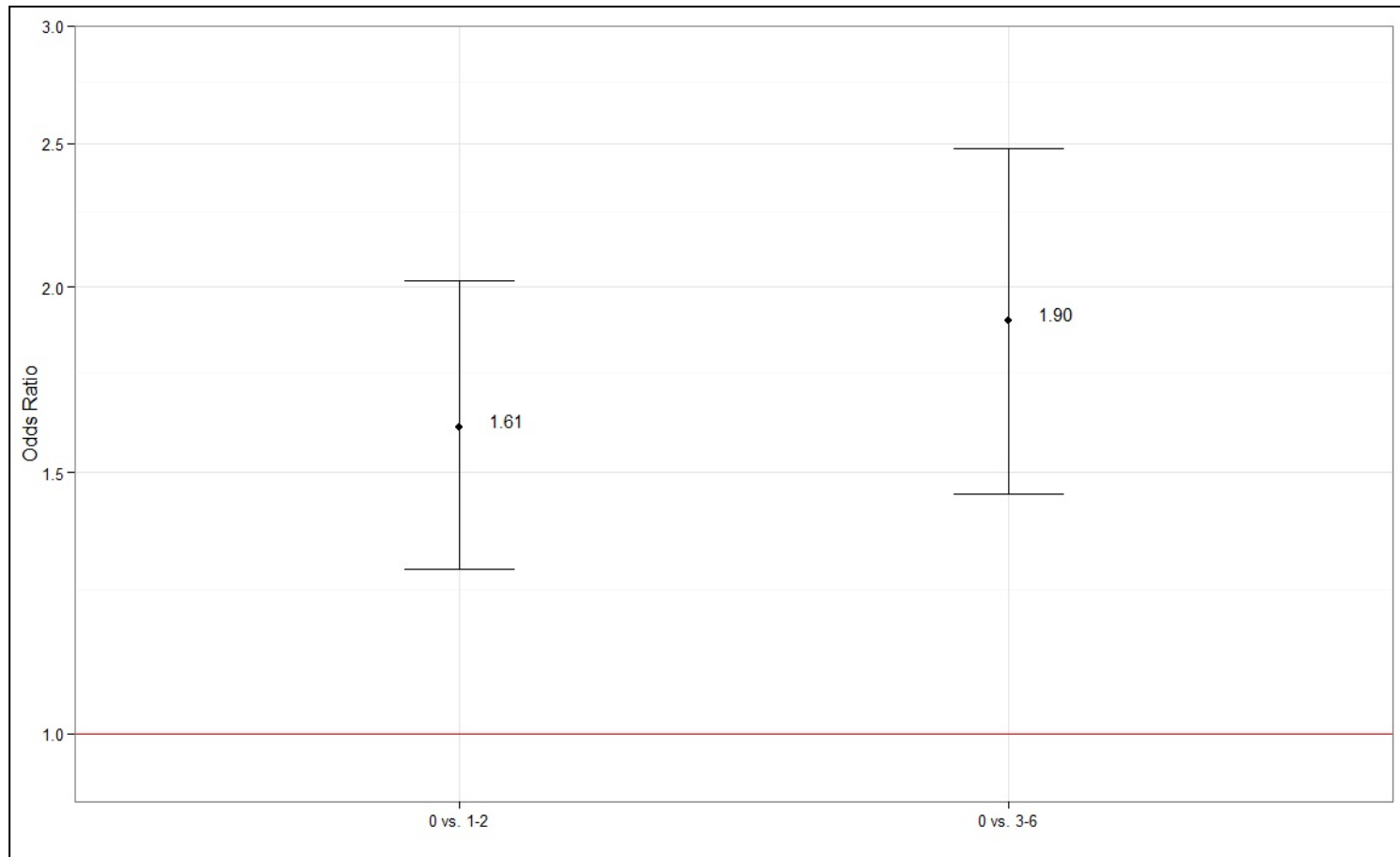
# Depressive Severity Index



# Positive Symptoms Scale - Long

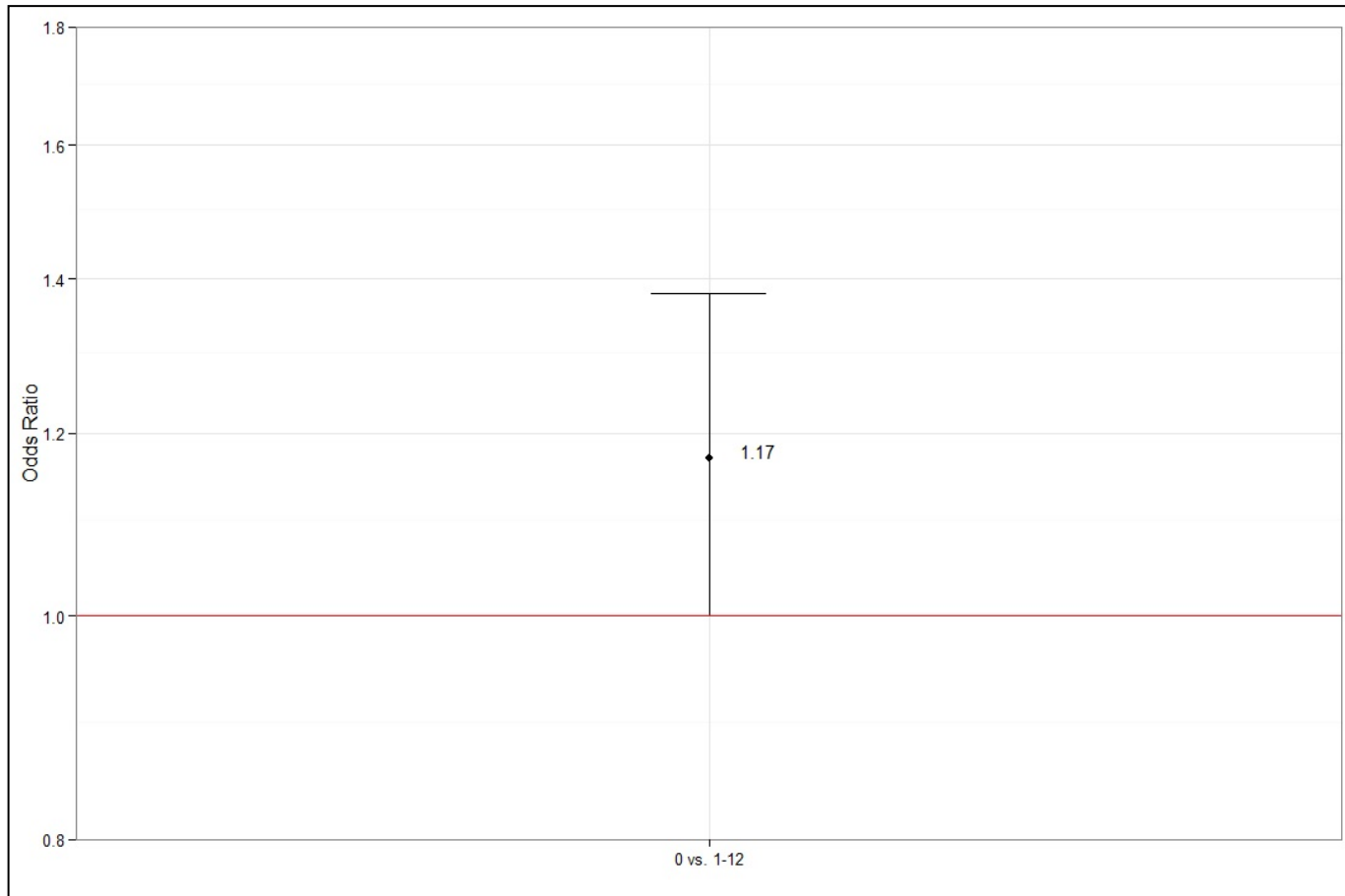


# Cognitive Performance Scale

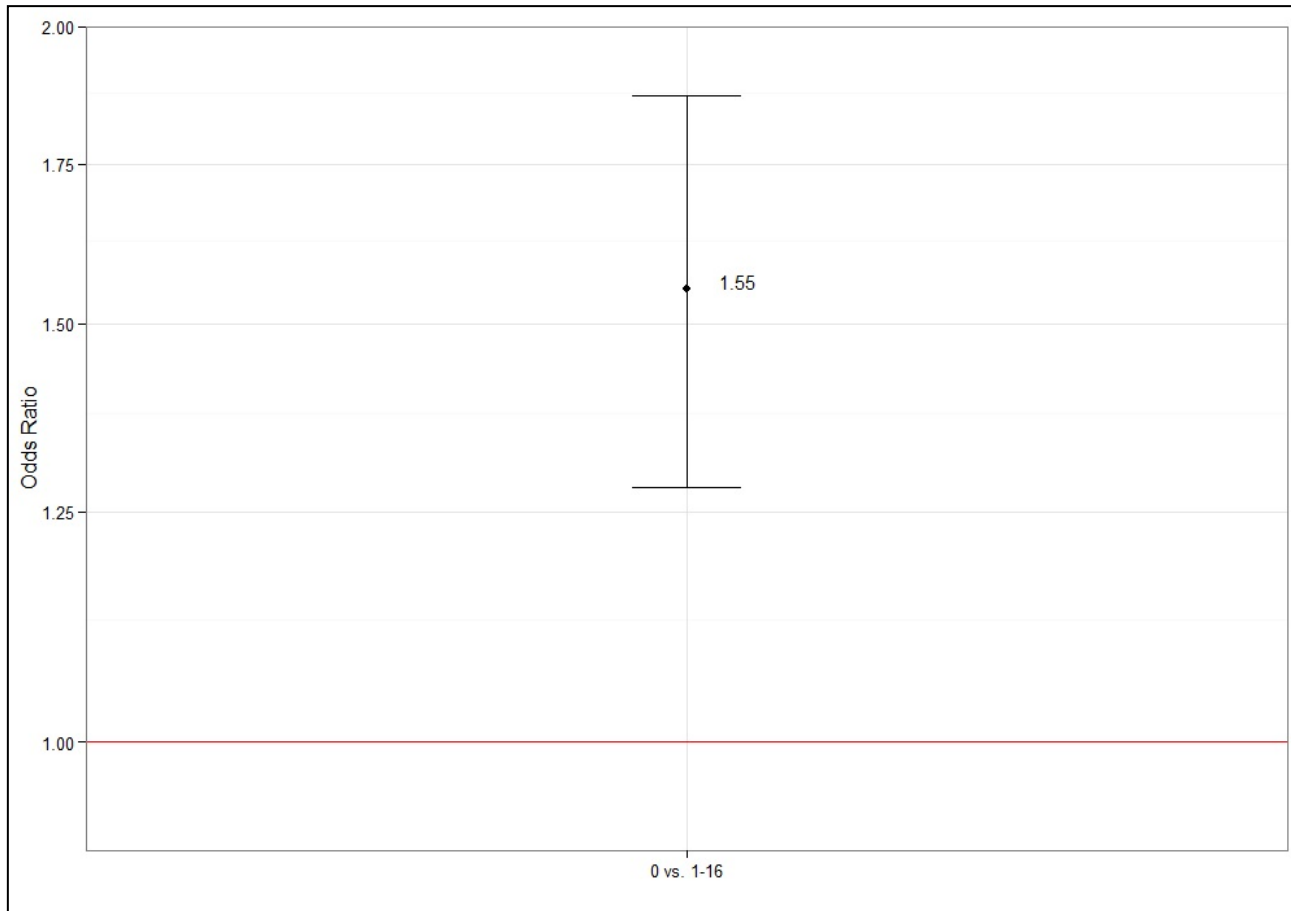




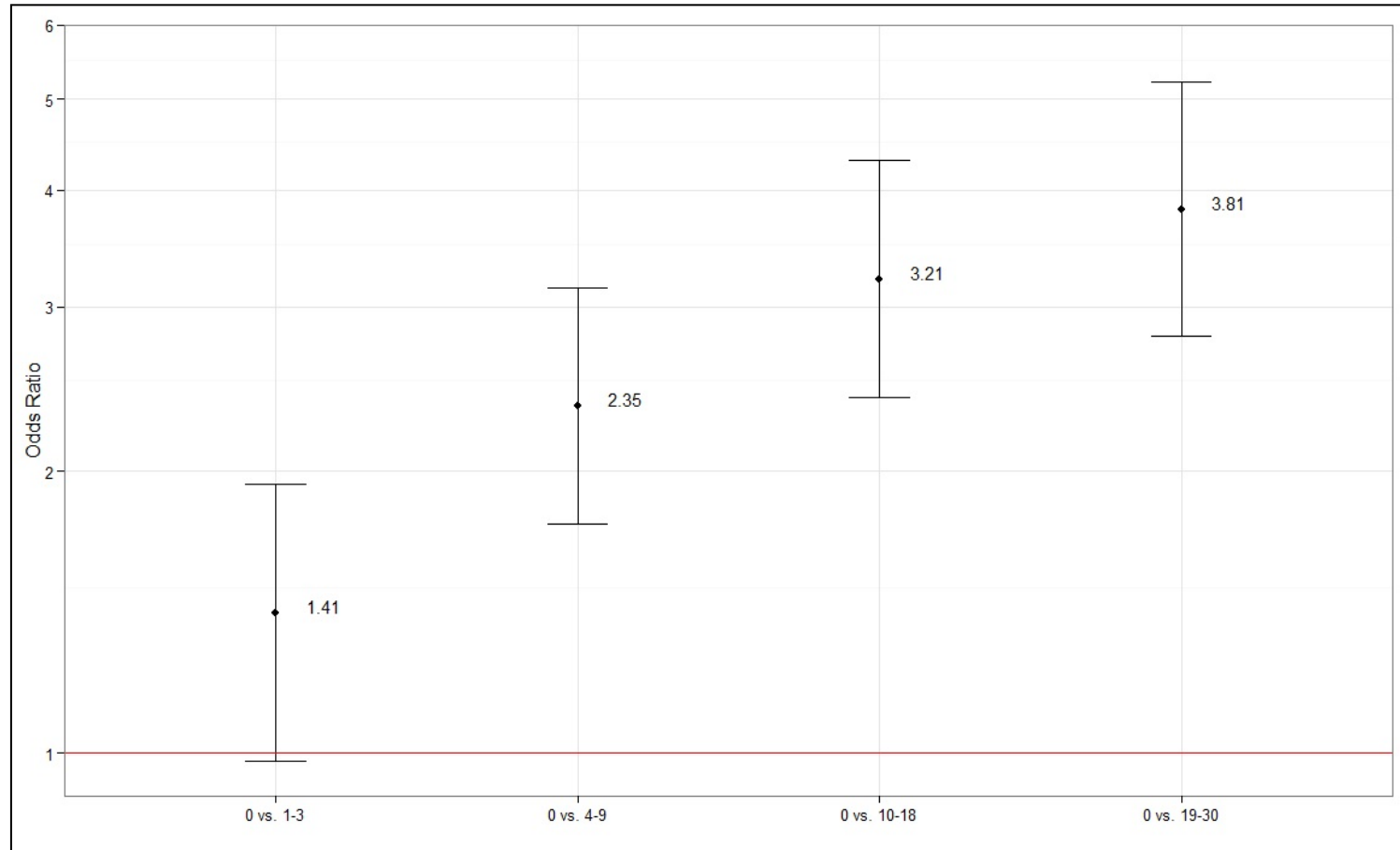
# Aggressive Behaviour Scale



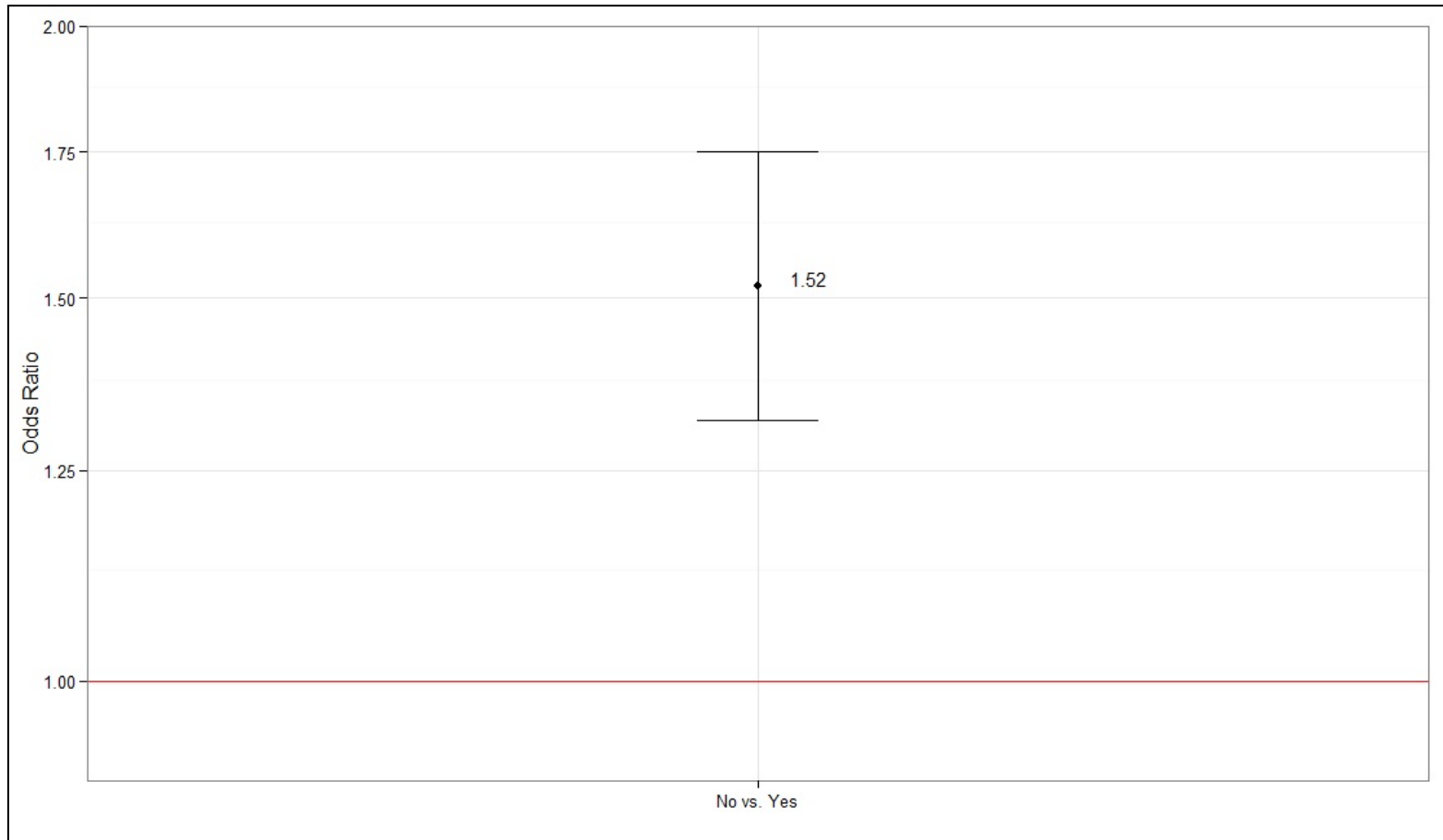
# Activities of Daily Living



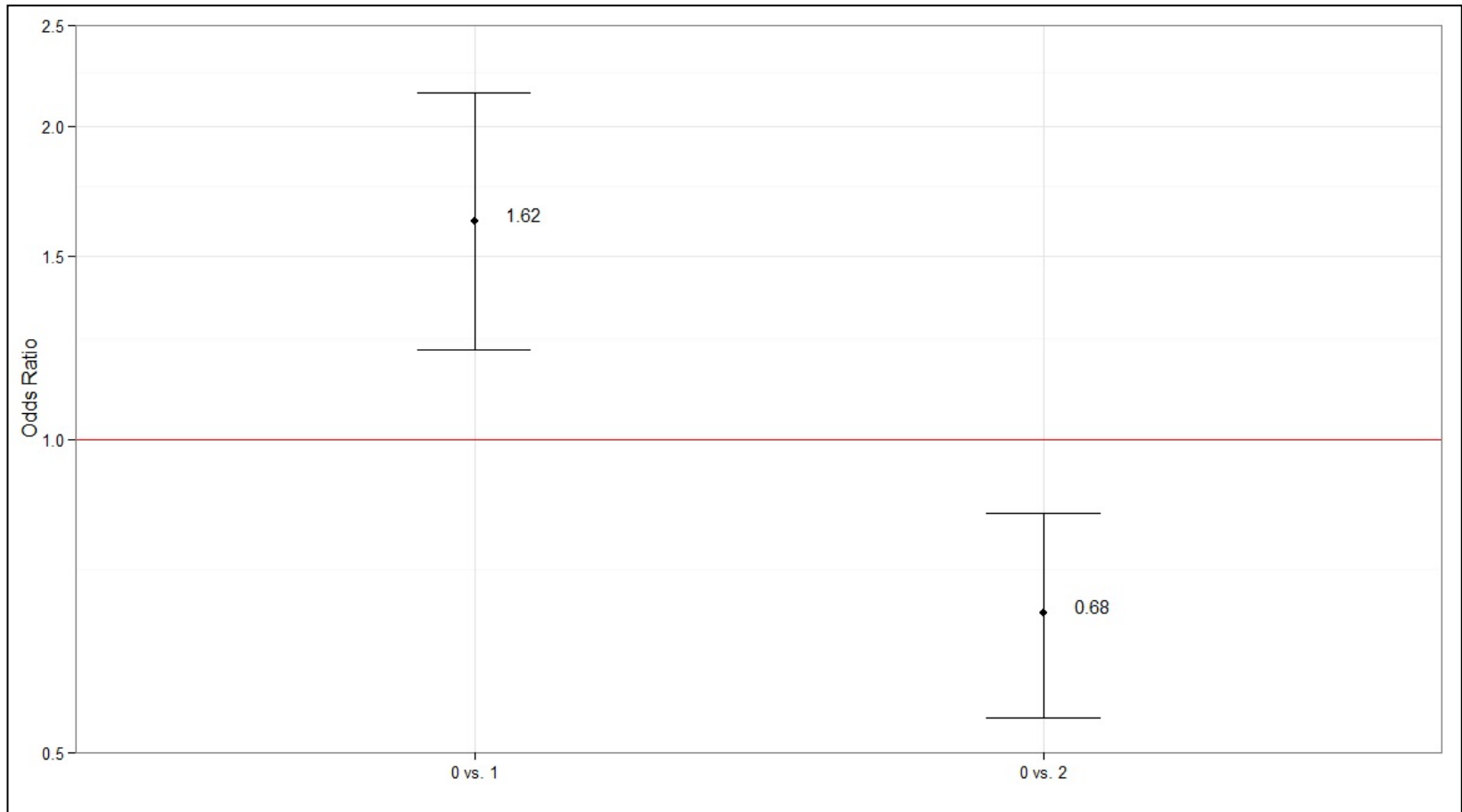
# Instrumental Activities of Daily Living



## Social Supports for Discharge CAP



## Substance Use CAP



# Discussion

## Conclusions

- Factors that are associated with mental health symptoms are negatively predictive of ALC
- Factors that are peripheral to mental health are positively associated with ALC
- Certain groups appear to be more at risk of being designated ALC based on their demographic or clinical characteristics

## Implications

- The RAI-MH assessment tool can be used to predict ALC outcomes
- Based on the results of this study, preventative interventions may be designed & implemented to reduce ALC designations
- Results can also be used to contemplate the types of services needed in the community to reduce ALC



## Future Research

- Examination of regional and facility-level factors of ALC
- Development of new decision support algorithms
  - ALC risk at admission
- Explore possible interventions & policy options to manage risk
  - New interRAI CAPs should be used to inform care over the episode
  - Develop community/non-hospital resources matched to needs of ALC patients

# Acknowledgements

