

Relationship of Attention, Resilience, and Alcohol in College Students

Rhea Parikh and Amanda Elton

Department of Psychology and Neuroscience

University of North Carolina at Chapel Hill, Chapel Hill, NC 27599

Psychology & Neuroscience



UNC COLLEGE OF ARTS & SCIENCES

INTRODUCTION

- Personal choices, environment, and genetic predisposition can contribute to an individual's alcohol consumption level.^{1,2}
- Despite having risk factors, many don't develop alcohol use problems.²
- Resilience can reduce an individual's risk for alcohol use disorders.²
- Attention is related to resilience based on self-report measures, but it's unknown if behavioral measures of attention are useful as a marker for resilience.²
- In this study, a task measure of attention was used to determine if it serves as a marker of resilience.²
- Behavioral analyses from 4 months of online data collection are presented.

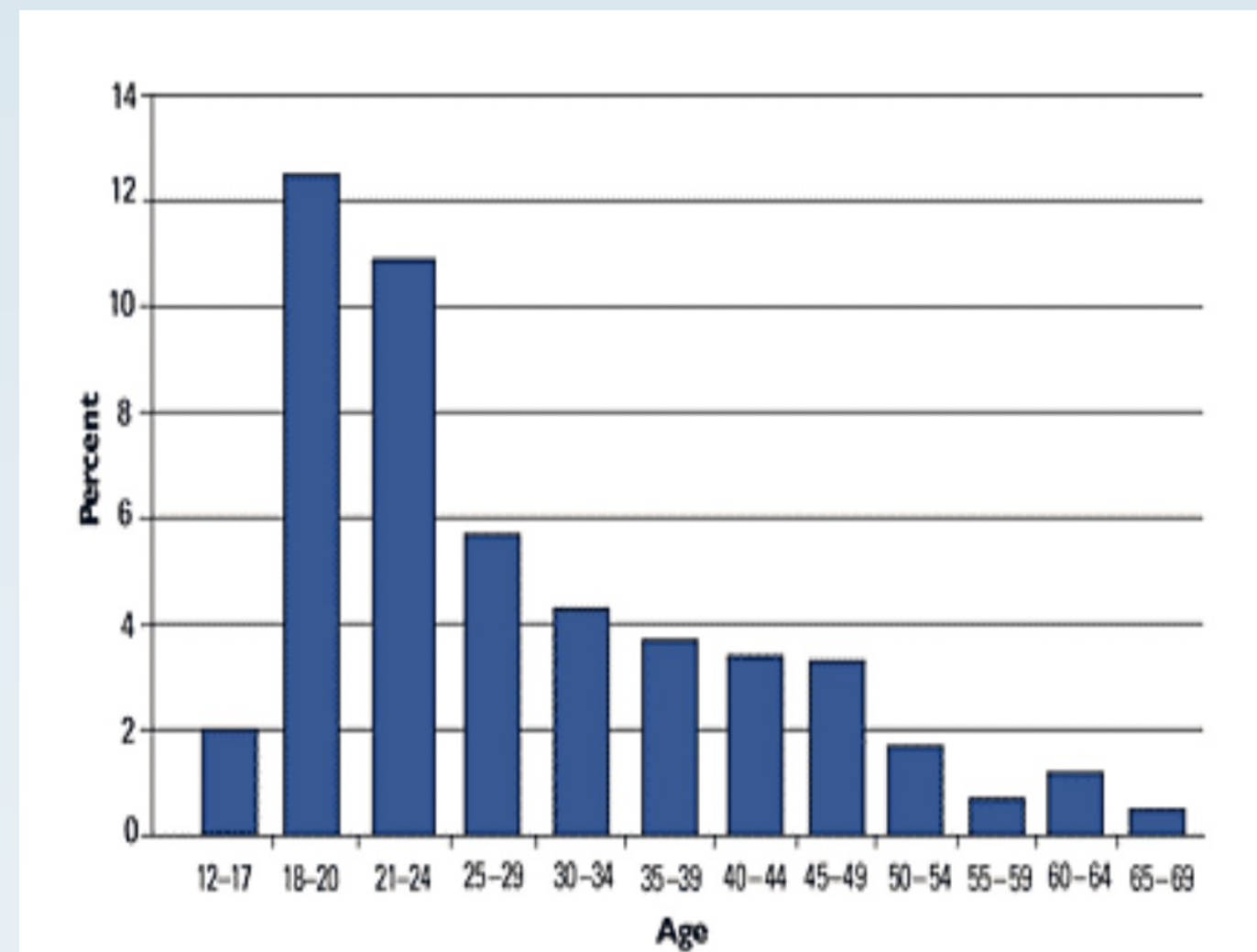


Figure 1. Prevalence of Past Year DSM-IV Alcohol Dependence by Age in the United States¹

Hypothesis: Attention ability promotes resilience to binge drinking amongst individuals at risk for alcohol use disorders based on family history.

METHODOLOGY

Subjects: One-hundred forty-five first-year college students (18-22 years old) have been enrolled to-date. Participants were recruited through the UNC psychology participants' pool. Each participant underwent an online study, containing a set of surveys and a SART behavioral task to measure attention. Responses to the Family History Assessment Module determined family history (FH) of alcoholism. Data were missing for thirteen participants and excluded for eleven participants for the attention task.

Participant Surveys: Participants were instructed to respond to a series of surveys through self-report. The first set of surveys will measure attention: Barratt Impulsiveness Scale (BIS), Conners Adult ADHD Rating Scales (CAARS), The Mindful Attention Awareness Scale (MAAS). The next set of surveys measure cognitive resilience: Child & Youth Resilience Measure-Revised (CYRM-R), Connor-Davidson Resilience Scale 10 (CD-RISC-10). A third set of surveys will measure alcohol use: The Alcohol Use Disorders Identification Test (AUDIT), Alcohol Use Questionnaire Q10-12/Carolina Alcohol Use Pattern Questionnaire, and the Family Tree Questionnaire (FTQ). Finally, we collected basic demographic information, including age, sex, race, ethnicity, and academic year.

SART Attention Task: Participants completed an attention task, called the Sustained Attention to Response Task, which is a simple cognitive task in which a sequence of numbers is presented on a screen, each followed by a series of X's. Participants press a button every time a number appears unless it is number 3.

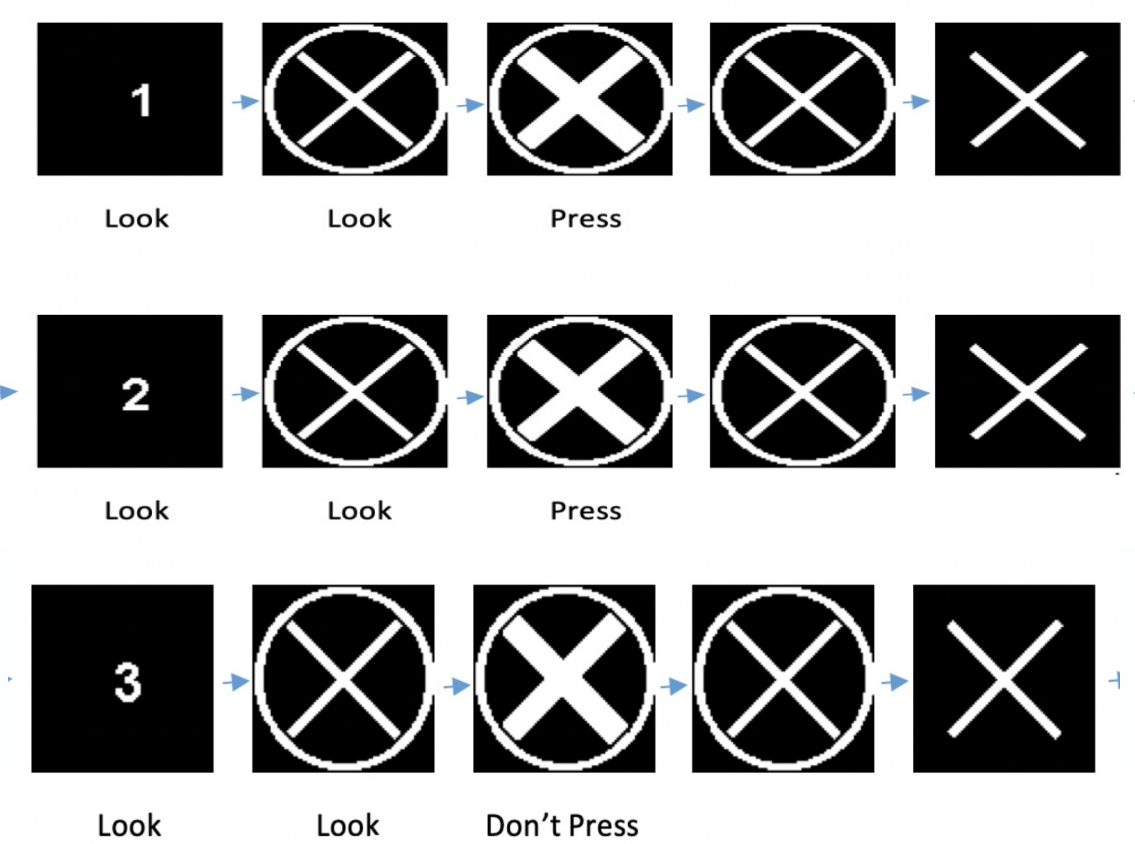


Figure 2. Attention Task

If 3 appears, participants wait for the next number. This task measures a participant's ability to sustain attention and lasts approximately 10 minutes. Errors of omission and errors of commission were calculated. Behavioral measures of attention from this task and surveys were compared and tested with factors such as FH and sex.

Behavioral measures of attention and resilience from the task and surveys were correlated, and measures of attention and binge drinking were correlated with family history alcohol use as a factor.

RESULTS

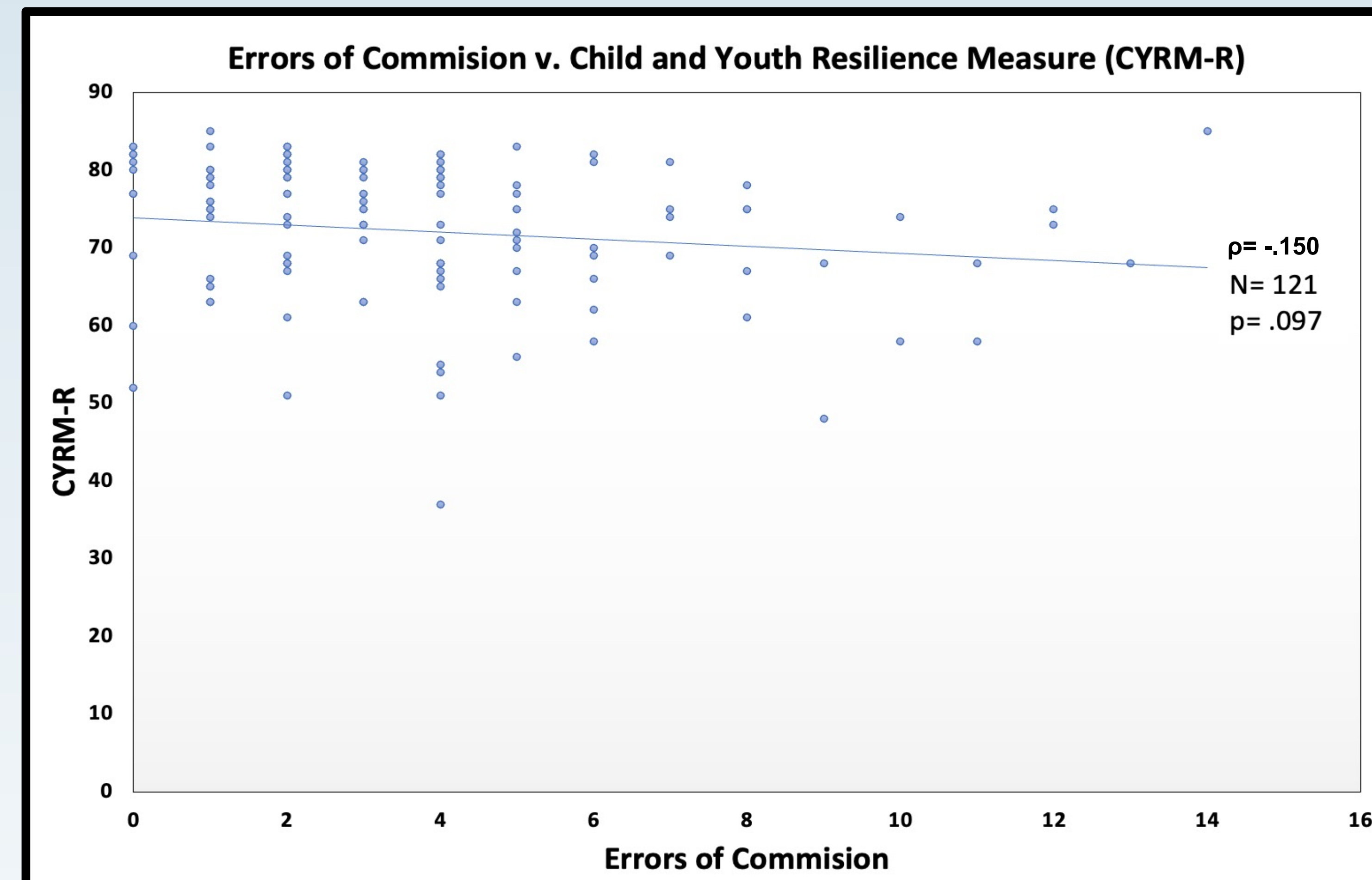


Figure 3. Relationship between task-based attention and youth resilience measure.

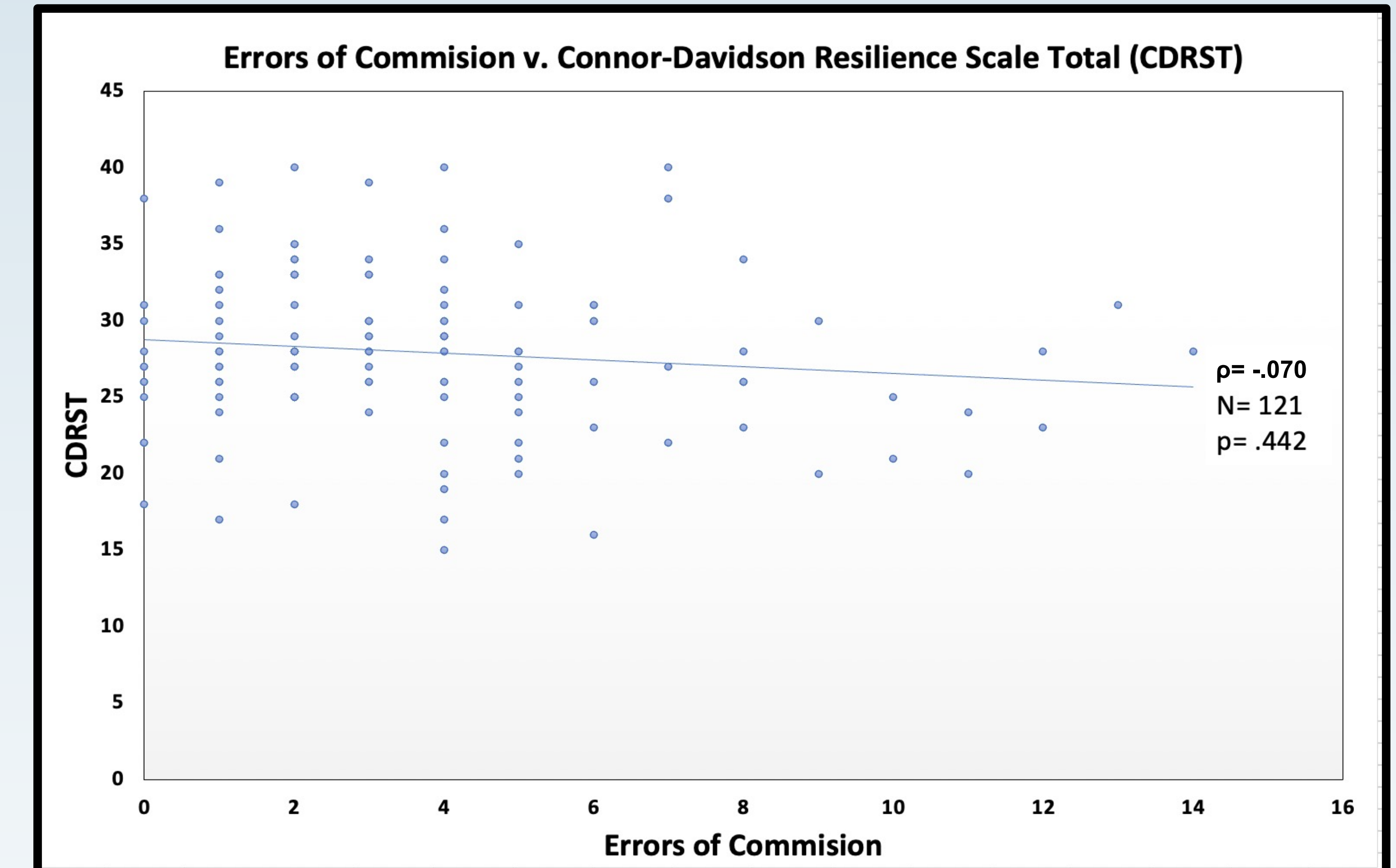


Figure 4. Relationship between task-based attention and resilience scale measure.

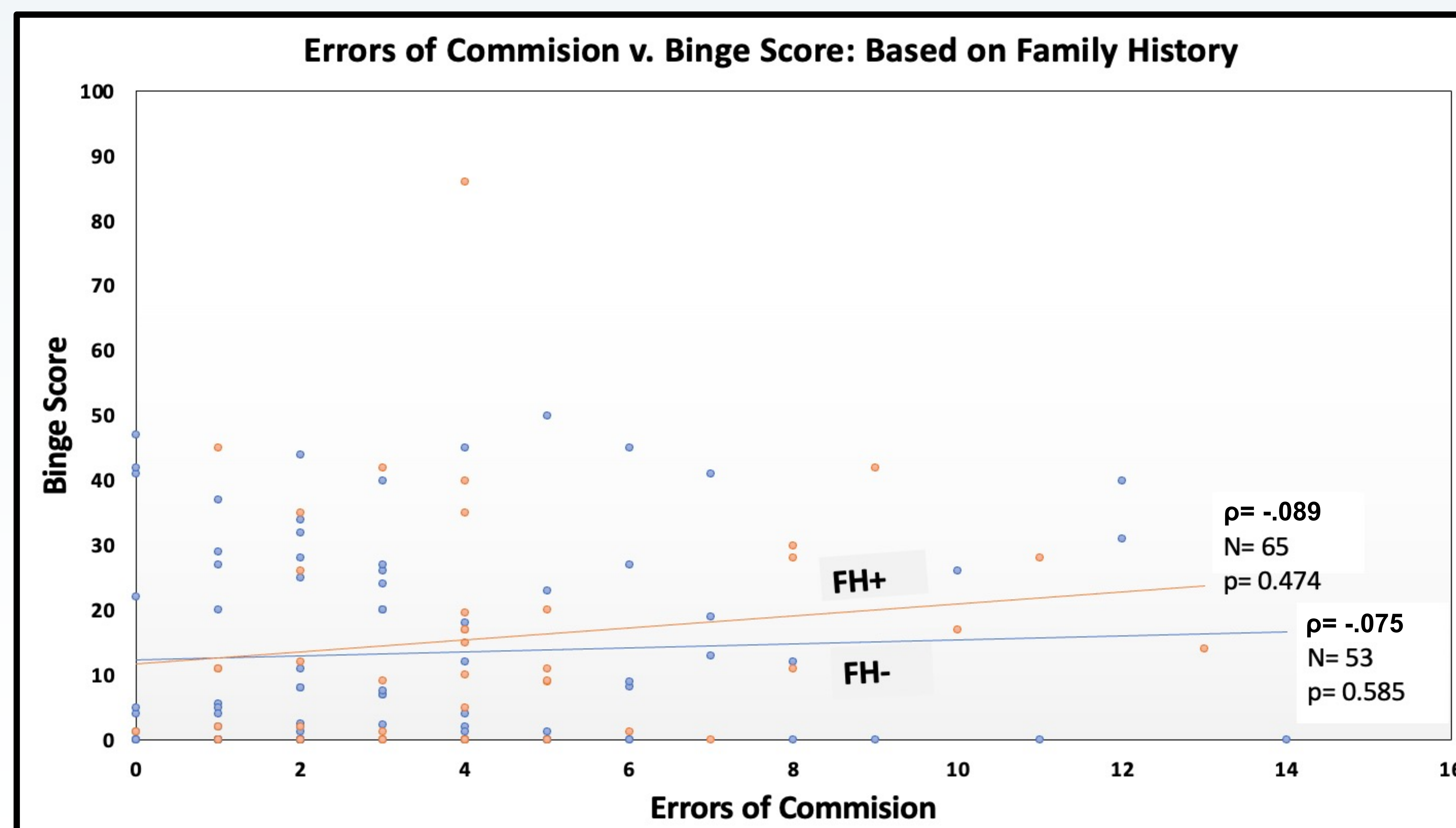


Figure 5. Relationship between task-based attention and binge drinking score based on an individual's AUD family history.

DISCUSSION

- Behavioral data collection is approximately 2/3 of the way complete.
- Individuals at risk for alcohol use disorder (AUD) based on family history did show a stronger relationship between attention and binge drinking than individuals not at risk for an AUD.
- Also, there was a detectable relationship between attention and resilience: stronger attention results in better resilience.
- However, preliminary analyses **failed to detect any significance** in the relationships between a task measure of attention, resilience, and binge drinking.
- Therefore, increase in sample size and follow-up surveys can be assessed to determine any increase in overall significance.
- Additional findings can help determine if this behavioral attention task can serve as a determinant for attention related resilience and potentially used in neuroimaging studies to uncover brain mechanisms using fMRI.

REFERENCES

- Grol M, De Raedt R. The influence of psychological resilience on the relation between automatic stimulus evaluation and attentional breadth for surprised faces. *Cogn Emot*. 2015;29(1):146-57. doi: 10.1080/02699931.2014.895299.
- Jij NIAAA 2001-2002 National Epidemiological Survey on Alcohol and Related Conditions (NESARC) data (18-60+ years of age) and Substance Abuse and Mental Health Administration (SAMHSA) 2003 National Survey on Drug Use and Health (NSDUH) (12-17 years of age).