



Introduction

- There is preliminary evidence that hazardous drinkers display poor fear regulation; however, it is unclear if alcohol use is also associated with impaired safety learning, which itself is associated with poor fear regulation.
- Notably, poor safety learning and poor fear regulation are both prominent features of trauma-related psychopathology, namely posttraumatic stress disorder (PTSD).

Current Study

- We tested the relationship between self-reported alcohol use, PTSD symptom severity and safety learning measured by neutral cue ratings.
- We also tested how alcohol use moderates the relationship between safety learning and PTSD symptom severity.

Participants: 154 participants completed the Fear, Safety, and Reward Study (FSARS)

- FSARS task:** Geometric shapes were paired with different outcomes - aversive noise (Fear), \$0.25 (Reward), or no outcome (Neutral). (see Figure 1)³
- Learning Metric:** 1-9 Likert scale (1=very good, 9=very bad) evaluating each geometric shape after the computer task
- The Alcohol Use Disorder Identification Test:** Self-assessment about alcohol use
- Clinician-Administered PTSD Scale for DSM-5:** Structured interview used to assess the severity of PTSD symptoms based on the criteria in the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM-5)
- Analyses:**
 - Pearson correlation (bivariate) between AUDIT and Safety ratings
 - Pearson correlation (bivariate) between PCL and Safety ratings
 - Moderated regression using PROCESS Model 1 for PTSD symptom severity and safety rating moderated by alcohol use.
 - Moderated regression using PROCESS Model 1 for alcohol use and safety rating moderated by PTSD symptom severity.

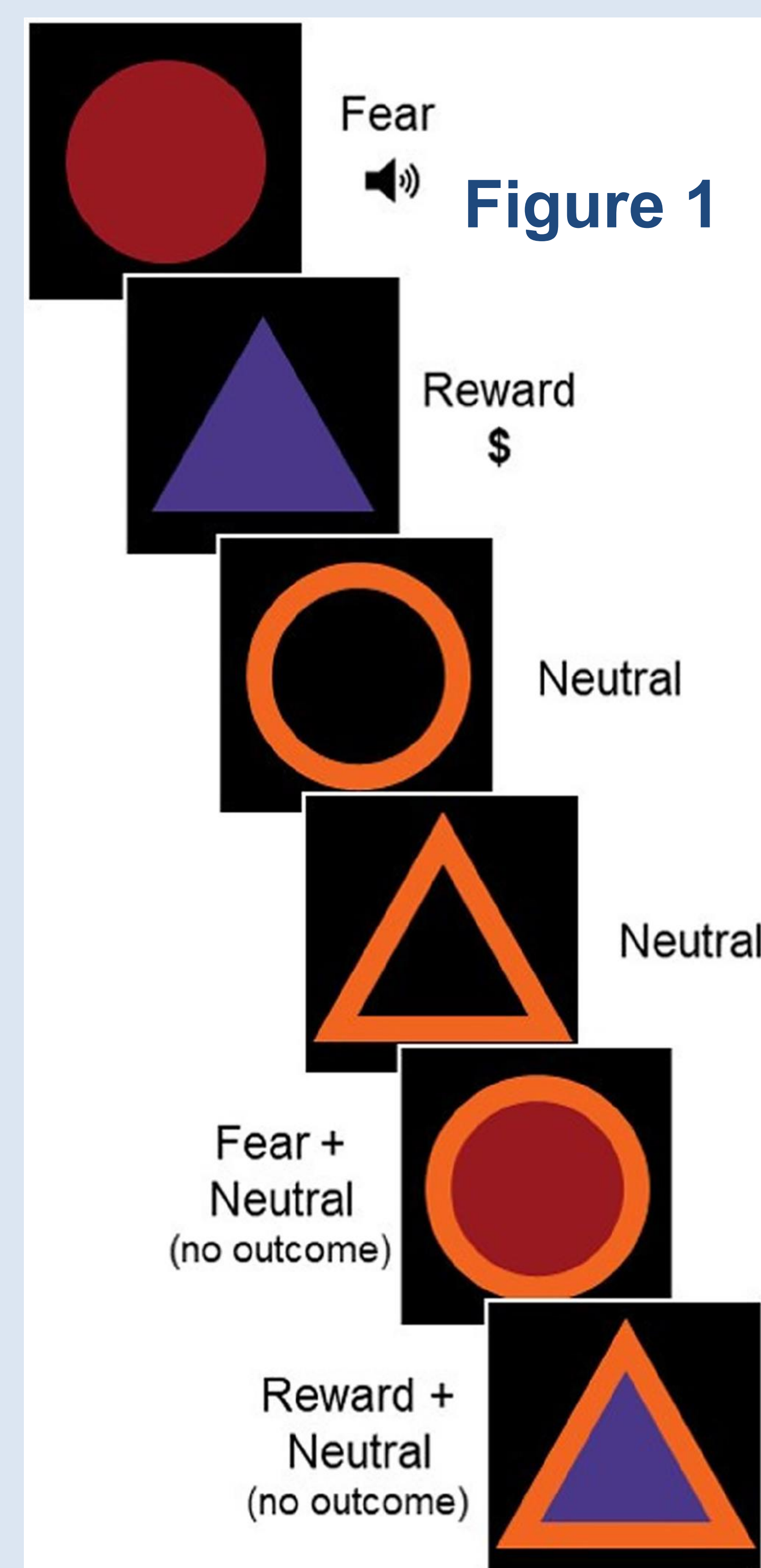


Figure 1

Results

Table 1. Descriptive Statistics

	(n=154)
Age (Mean/SD)	19.09/1.3
Gender	
Female	104 (67.5%)
Male	47 (30.5%)
Gender Variant/ Non-conforming	2 (1.3%)
Prefer not to answer	1 (0.6%)
Race	
White	103 (66.9%)
Black/African-American	18 (11.7%)
Asian	8 (5.2%)
Arab, Middle Eastern, North African	12 (7.8%)
Other	10 (6.5%)
Choose not to answer	3 (1.9%)
Ethnicity	
Non-Hispanic	112 (72.7%)
Hispanic	31 (20.1%)
Other	6 (3.9%)
Choose not to answer	4 (2.6%)

Figure 2: Neutral-Fear paired

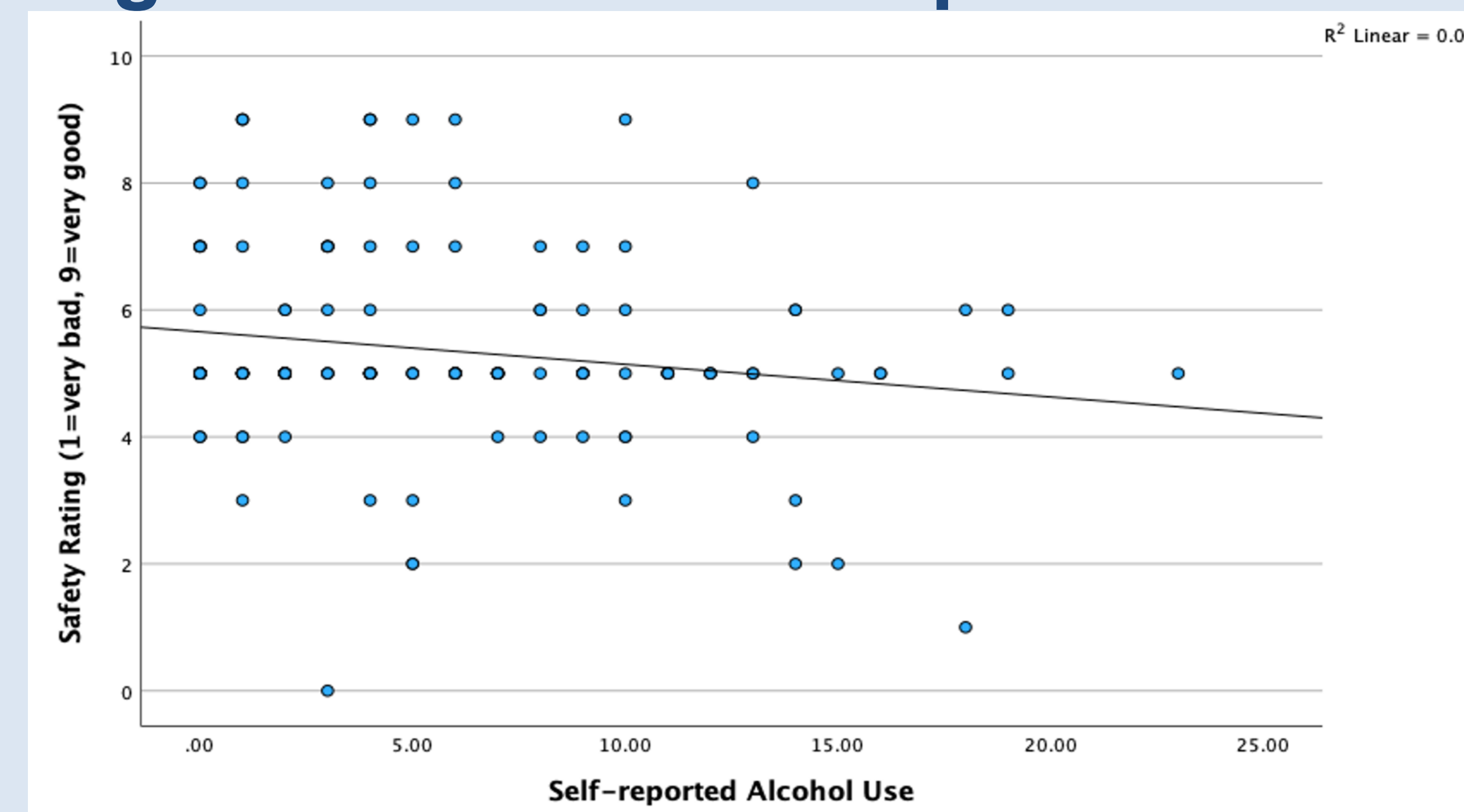


Figure 3: Neutral-Safety paired

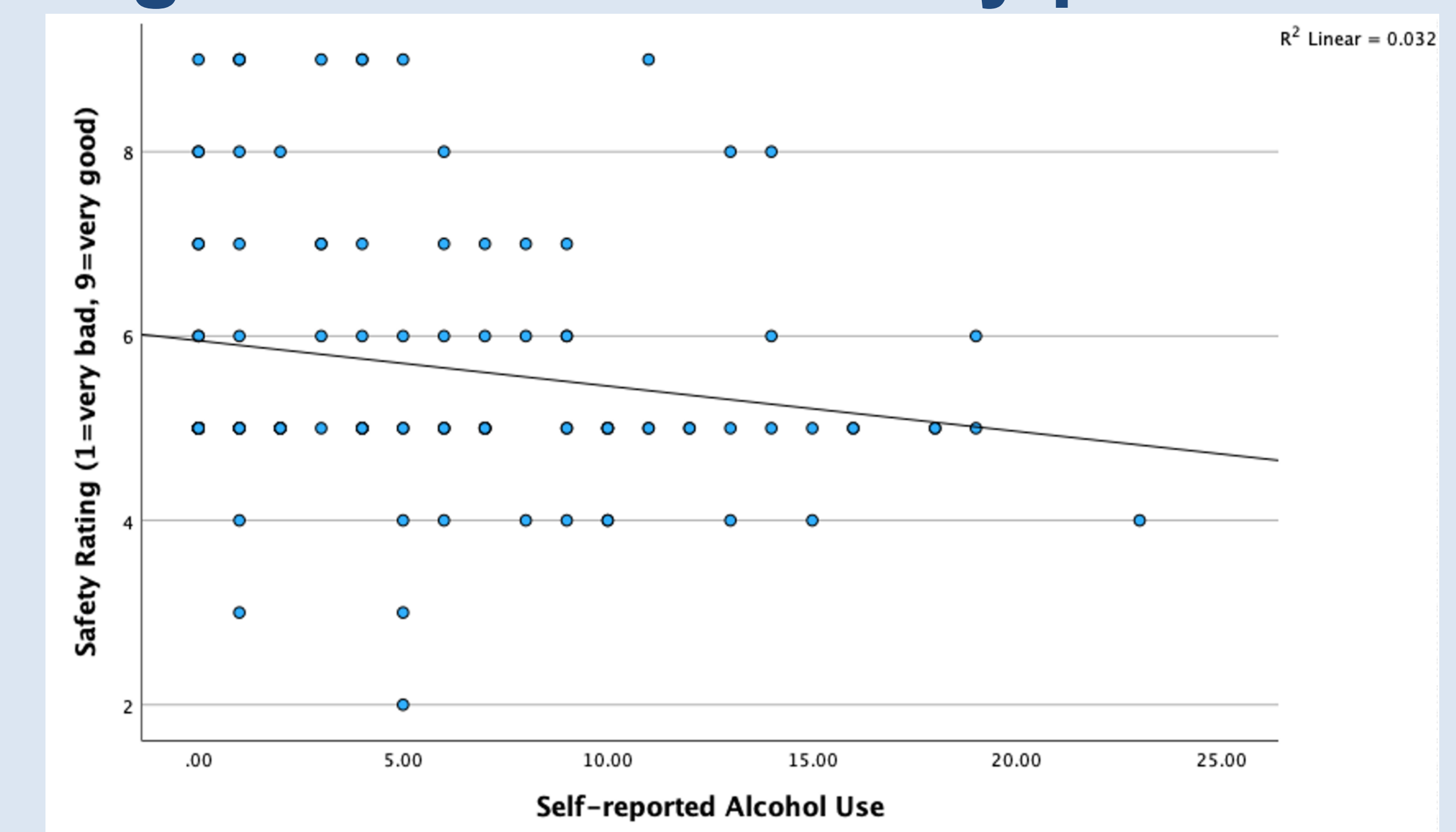
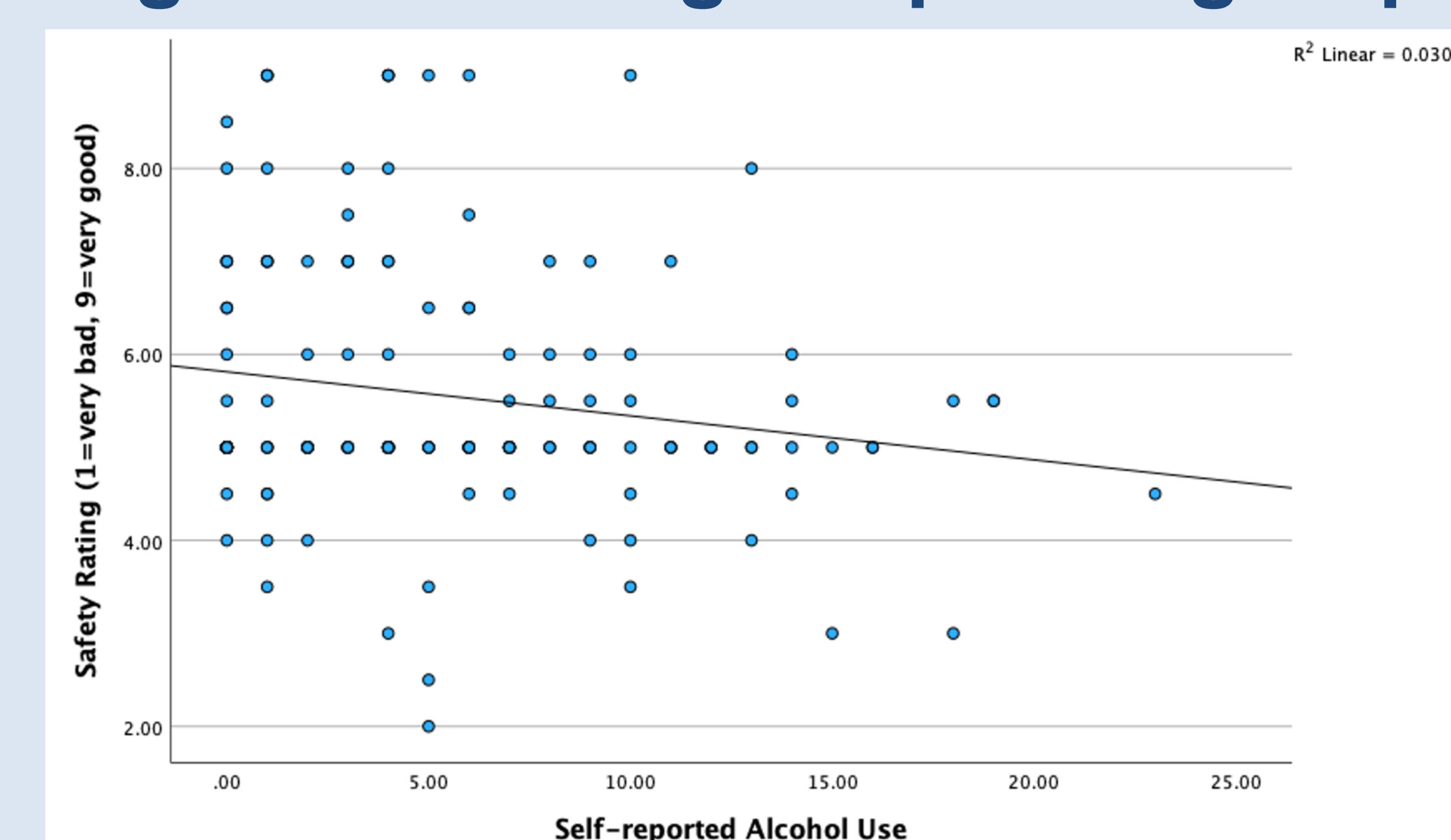


Figure 4: Average of paired groups



- Greater Alcohol use is significantly negatively correlated with lower ratings of neutral cues, indicating poor safety learning ($r(152) = -0.17, p = .034$).**
- No correlation was found between PTSD symptom severity and safety ratings ($p=0.38$)
- Alcohol use did not moderate the relationship between PTSD symptom severity and safety ratings.**

Conclusion

- Results suggest that greater alcohol use is related to lower ratings of neutral cues, therefore worse awareness of conditioned neutral cues indicating safety and that Severity of PTSD symptoms did not moderate this relationship.
- This effect may have implications regarding the treatment of individuals with alcohol use disorders.

References

- Fitzgerald, J. M., Webb, E. K., Davis, K., Bennett, M., Benjamin, T., Pegau, B., & Sangha, S. (2025). PTSD symptoms moderate predictors of psychophysiological arousal during fear inhibition: Evidence from a fear, reward, and neutral discrimination task. *Journal of Affective Disorders*, 119401.
- Jovanovic, T., Kazama, A., Bachevalier, J., & Davis, M. (2012). Impaired safety signal learning may be a biomarker of PTSD. *Neuropharmacology*, 62(2), 695-704.