

A New Implicit Measure of Cue-Reactivity

Preliminary Data on Spontaneous Craving-Related Thoughts in an Immersive 360° Environment

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1 Background

Drug cues automatically capture attention, trigger approach tendencies, and activate implicit affective associations, contributing to subjective craving. Although several implicit measures exist (such as behavioral economic and psychophysiological indicators or tasks like the IAT or addiction-Stroop) a spontaneous measure of cognitions in response to drug cues in real-time is lacking.

4 Pilot Phase & Sample Description

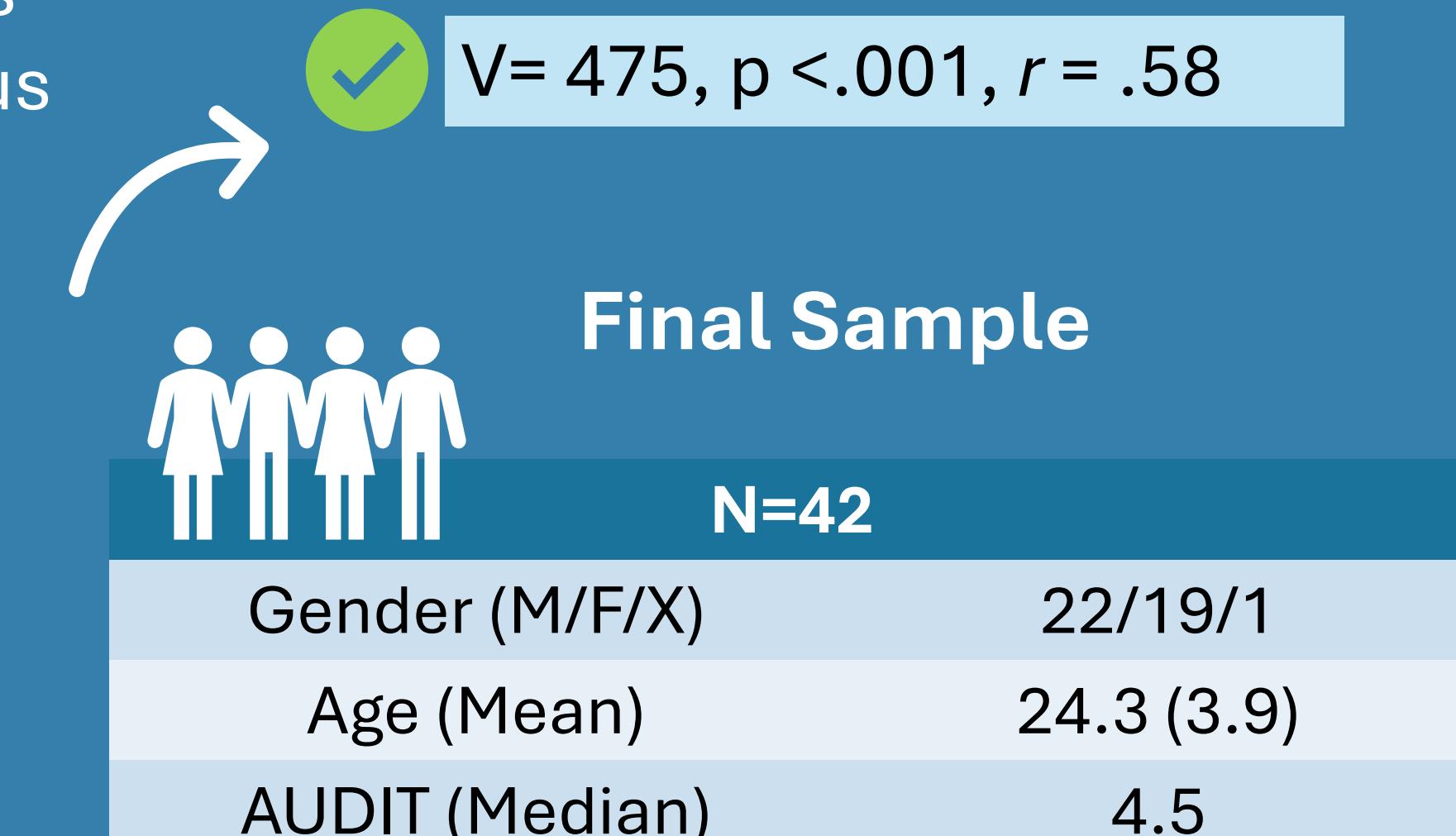
Pilot Phase: “Do Craving Related-Cognitions distinguish between reactions in neutral versus alcohol-related VEs?”



N=25
Mean N of CRCs= 0
(range= 0-0)



N=25
Mean N of CRCs= 1.44
(range= 0-5)



2 Aim

Develop and validate a new implicit method for capturing craving-related cognitions (CRCs) in response to drug cues, using a think-aloud procedure (TAP) in an immersive 360° virtual environment (VE).



5 Results

Table 1. Kendall's tau correlation coefficients for think-aloud variables and craving/ consumption measures

	OCDS-O	OCDS-C	AUDIT	Craving VAS
Number of ARCs	-0.2	.17	.08	.23*
Number of CRCs	.20	.37**	.30*	.49**
CRC intensity (n=31)	.43**	.44**	.43**	.63***
Own use focus (n=31)	.35*	.37**	.27*	.44**
Other's use focus (n=31)	-.27	-.26	-.14	-.24
Craving VAS	.23*	.38***	.46***	-

Note. ARC= Alcohol-Related Cognitions, CRC= Craving-Related Cognitions, Intensity= Median value of intensity ratings for each CRC on a scale from 1 to 7, Own use= Median rating on “This thought is about my own drinking” (1-7), Other's use= Median rating on “This thought is about others' drinking” (1-7), VAS= Visual Analog Scales, OCDS= Obsessive-Compulsive Drinking Scale, O= Obsessive subscale, C= Compulsive subscale. All correlations were tested one-sided, all p-values were corrected using Benjamini-Hochberg correction. * $<.05$, ** $<.01$, *** $<.001$

6 Take Home Messages

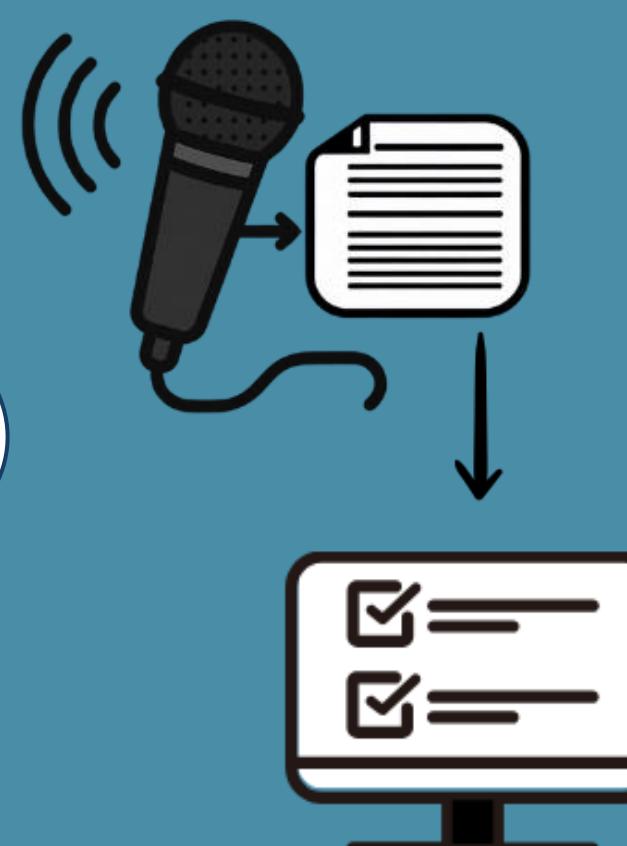
- 1 Number of CRCs & their intensity were significantly associated with standard measures of craving and alcohol consumption.
- 2 Only CRCs relatedness to one's own alcohol use (*not to others'*) was positively linked to craving and consumption measures.
- 3 These real-time measures might validly represent spontaneous, cognitive aspects related to alcohol cue-reactivity.

3 Methods

1. TAP – VE Training (2 min.)

2. VE Immersion (4 min.)

Recording & Transcription



3. Thought Evaluation

- Alcohol-related?
- Craving related? → Intensity?
- Related to own consumption, or to others'?

4. Questionnaires

- OCDS, AUDIT, Craving VAS, Presence, Cybersickness, etc.

7 Limits & Perspectives

- Should be validated against other established craving scales and cue-reactivity-related behaviors
- The “ecological” nature of the task = debatable (TAP in a VE can feel unnatural)
- Appears to provide meaningful access to participants' in-the-moment thoughts during alcohol cue exposure. Promising alternative to traditional self-report measures by capturing real-time, unprompted cognitive responses, beyond direct questions such as “How strong is your craving for alcohol?” (implicit measure)