

# Investigation on Examiner “Um” and “Uh” Usage in ADOS-2 Sessions

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(10) so I went round to Jackie, { . uh . } to { uh } Pam, at the hospital (2.12.799)

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# “Um” and “uh” and ASD

Numerous studies have analyzed “um” and “uh” usage in ASD children<sup>1</sup>

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2. Investigate whether within-group differences in examiner “um” and “uh” usage vary by participant age, intellectual ability, expressive language ability, or autism symptom severity



# Methods

## Participants

- 111 total
  - ASD: n = 83 (68 male)
  - TD: n = 26 (12 male)
- 7-17 years old
- Recruited for an fMRI study at OHSU
- Native English speakers
- Full-scale IQ  $\geq 70$

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## Language samples

- Transcribed ADOS (Module 3) sessions
- Only the conversation tasks:
  - Emotions
  - Social Difficulties & Annoyance
  - Friends, Relationships, and Marriage
  - Loneliness

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$$\text{um-ratio} = \frac{\text{ums}}{(\text{ums} + \text{uhs})}$$

*Did they say “um” or “uh” more often?*

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  - Kendall rank correlation coefficients
  - Adjust p-values using the Benjamini Hochberg procedure to reduce false discovery rate

# Results: Objective 1

Table 1: Examiner filler usage rates

	ASD	TD	U	p	$r_{rb}$
um-rate	0.006 [0.003, 0.009]	0.009 [0.005, 0.013]	763	0.007**	-0.343
uh-rate	0.001 [0.001, 0.003]	0.002 [0.001, 0.003]	1038.0	0.399	-0.107
um-ratio	0.775 [0.603, 0.917]	0.775 [0.711, 0.946]	1017.5	0.369	-0.114

*Median and IQR values are reported for um-rate, uh-rate, and um-ratio. Examiner filler usage rates between diagnostic groups were compared using Wilcoxon-Mann-Whitney Tests (U, p). Effect sizes were calculated using Glass rank biserial correlation coefficients ( $r_{rb}$ ).*

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Examiners use the filler “um” significantly less then conversing with children with ASD than children with TD

- $p = 0.007$ ; ASD < TD (0.006 < 0.009)
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*This mirrors previous results on participant “um” and “uh” usage*

# Results: Objective 2

Table 2: Correlations between examiner *um-rate*

	ASD	TD
Age	0.280**	0.150
Full-scale IQ	0.140	-0.200
MLUM	0.220*	-0.058
NDWR	0.180	0.150
CCC-2		
GCC	0.130	-0.260
Structural Lang.	0.150	-0.150
Pragmatic Lang.	0.085	-0.270
ADOS-2		
SA	-0.140	0.066
CS	-0.110	0.240

\*\* $p_{adj.} < 0.01$ ; \* $p_{adj.} < 0.05$

Kendall rank correlation coefficients ( $\tau_b$ ) between examiner *um-rate* and participant-level measures: age in years; full-scale IQ; mean length of utterance in morphemes (MLUM); number of different word roots (NDWR); CCC-2 General Communication Composite (GCC), structural language score, pragmatic language score; ADOS-2 Social Affect total (SA), Comparison Score (CS). Within-group p-values were adjusted using the Benjamini-Hochberg procedure to reduce false discovery rate.

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Examiner “um” usage when conversing with ASD participants is positively associated with participant *age* and *MLUM*....

...but not with more strenuous participant-level measures of expressive language ability and autism symptom severity



# Next Steps

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- Future work includes adding examiner-level variables in these analyses
  - Such as, examiner ID, time spent speaking, number of questions asked, etc.

# Thank you

## References

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