



# Research Week 2021

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

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### Keywords

autism spectrum disorder, natural language processing, fillers, disfluencies, examiner speech

### Abstract

#### Background

Studies have found that children with Autism Spectrum Disorder (ASD) use the filler “um” at a significantly lower rate than children with Typical Development (TD), with no difference in “uh” usage. Examiners’ filler usage in similar language samples has not been studied. We investigated whether differences in “um” and “uh” usage between ASD and TD children also appear in the speech of their conversational partners: the examiners.

#### Objectives

- (1) Compare examiner usage rates of “um” and “uh” when conversing with ASD vs. TD participants;
- (2) Investigate whether within-group differences in examiner filler usage vary by participant age, intellectual ability, expressive language ability, or autism symptom severity.

#### Methods

111 participants (ASD:  $n = 83$ , 68 males; TD:  $n = 28$ , 12 males), ages 7 to 17, were administered the Autism Diagnostic Observation Schedule (ADOS-2), module 3. All sessions were transcribed and four ADOS-2 tasks were analyzed. We computed three measures of filler usage: *um-rate*, *uh-rate*, and *um-ratio*.

#### Results

Wilcoxon-Mann-Whitney tests showed a significant difference in examiner *um-rate* between ASD and TD groups ( $p = .007$ ,  $ASD < TD$ ), with a medium effect size. There was no significant difference in examiner *uh-rate* between ASD and TD ( $p = .399$ ) or in examiner *um-ratio* ( $p = .369$ ).

#### Conclusions

Examiners use the filler “um” significantly less when conversing with children with ASD than children with TD, which mirrors previous results on “um” usage in ASD and TD. Examiner “um” usage is positively associated with participant age and mean length of utterance in morphemes (MLUM) but not with more strenuous participant-level measures of expressive language ability and autism symptom severity. Because analyses did not control for individual differences between examiners,

these results should be interpreted with caution. Further analyses that account for examiner-level measures are needed.