Adaptive Function Outcomes in FASD: Comparing Facial Phenotype and Associated Risk Factors

UC DAVIS HEALTH | MIND INSTITUTE

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Disclosure Statement

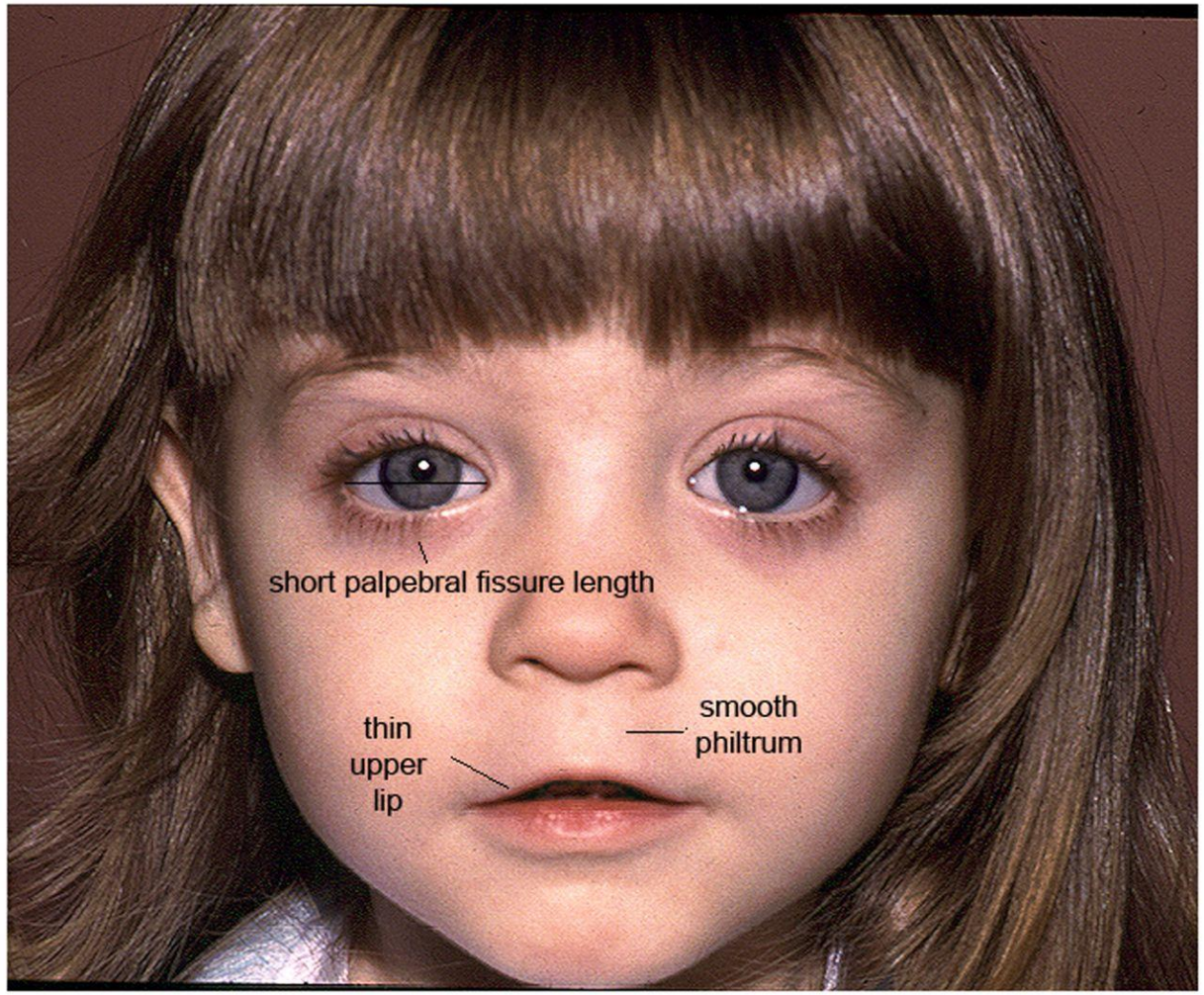
I have no conflict of interest or disclosures.

Introduction

- Children with FASD show high variability in adaptive functioning
- Facial features are often assumed to signal greater neurodevelopmental impairment
- Evidence on whether facial features correlate with functional outcomes remains mixed

Kautz-Turnbull C and Petrenko C L, 2021
Quatrosi et al, 2024

FASD Facial Features



Study Aims

- **To examine adaptive function profiles** between children who did and did not have sentinel facial features of FASD

- **To identify factors** contributing to significantly low levels of adaptive function

Study Design

- **Design:** Retrospective study of electronic medical records
- **Timeline:** July 2023 – November 2025
- **Participants:** 61 children (ages 2 months–20 years) from FASD and DBP Clinics at the MIND Institute, UC Davis

Categorization:

- **With Sentinel Facial Features:** FAS and pFAS
- **Without Sentinel Facial Features:** ARND

Tools & Analysis

Assessment Tools:

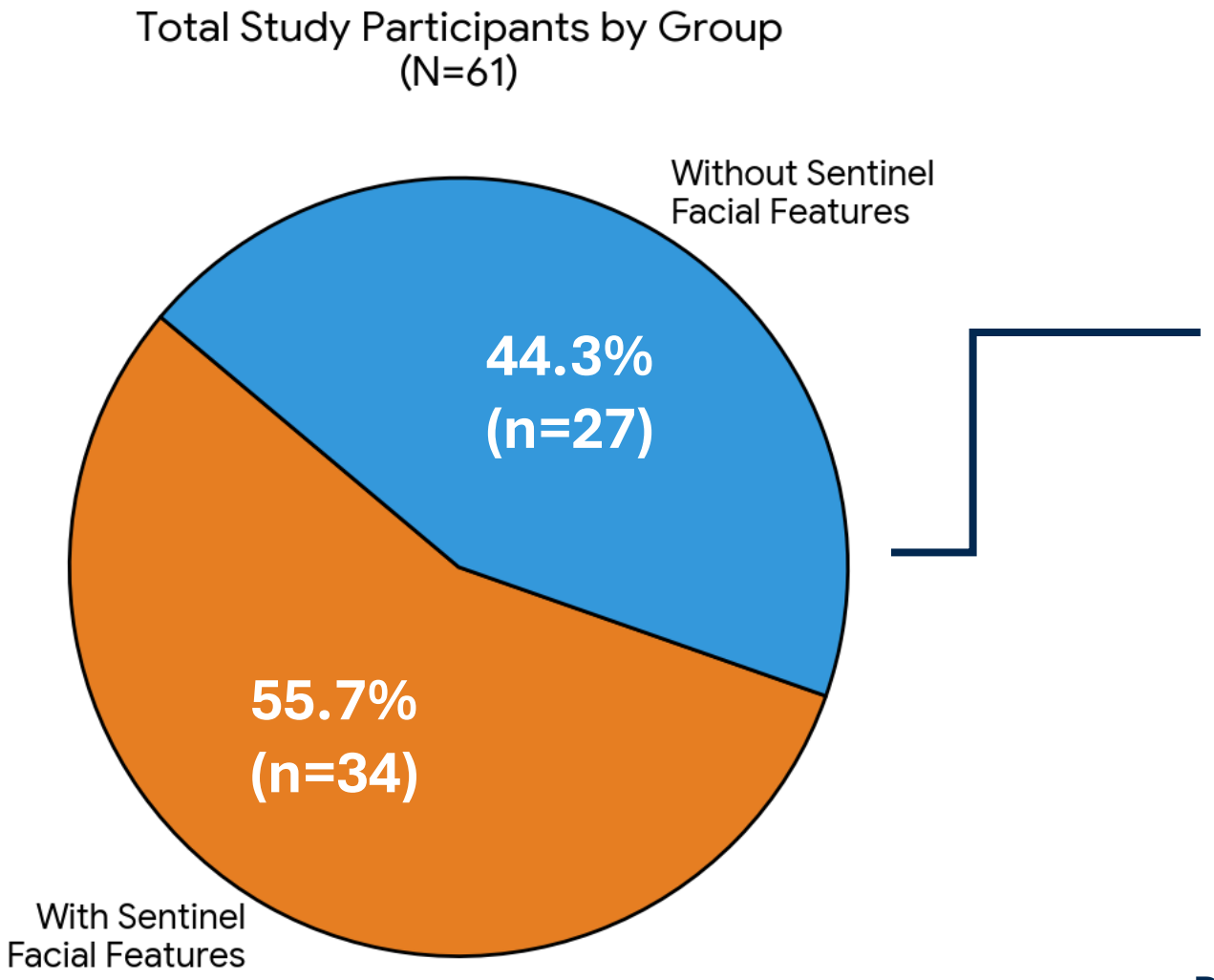
- Adaptive function: ABAS-3 and Vineland-3
  - "Significantly low" defined as score < -2 SD

- Multivariable logistic regression for low adaptive functioning variables

Table 1: Baseline Characteristics (N=61)

Characteristic	Value
Current Age, mean (SD)	8.4 (3.42) years
Age at Diagnosis, mean (SD)	6.48 (3.42) years
Gender – Male, n (%)	36 (59%)
FASD Diagnosis, n (%)	
- FAS	10 (16%)
- pFAS	23 (38%)
- ARND	28 (46%)
Race, n (%)	
- Caucasian	28 (46%)
- African-American	9 (15%)
- Mixed	9 (15%)
Caregiver, n (%)	
- Biological parents	3 (5%)
- Adoptive parents	43 (70%)
- Legal Guardians	15 (25%)

Baseline Characteristics (FASD facial features endorsed vs. FASD facial features not endorsed groups)



Male:	21 (62%)	15 (56%)
Mean age at diagnosis (y):*	5 (2.4)	8 (3.8)

FASD Diagnosis:

FAS	10 (29%)	0
pFAS	23 (68%)	0
ARND	1 (3%)	27 (100%)

Comorbidities:

ASD	9 (26%)	13 (48%)
ADHD	15 (44%)	18 (67%)
GDD/ID	15 (45%)	10 (37%)
Anxiety & Depression	4 (12%)	4 (15%)

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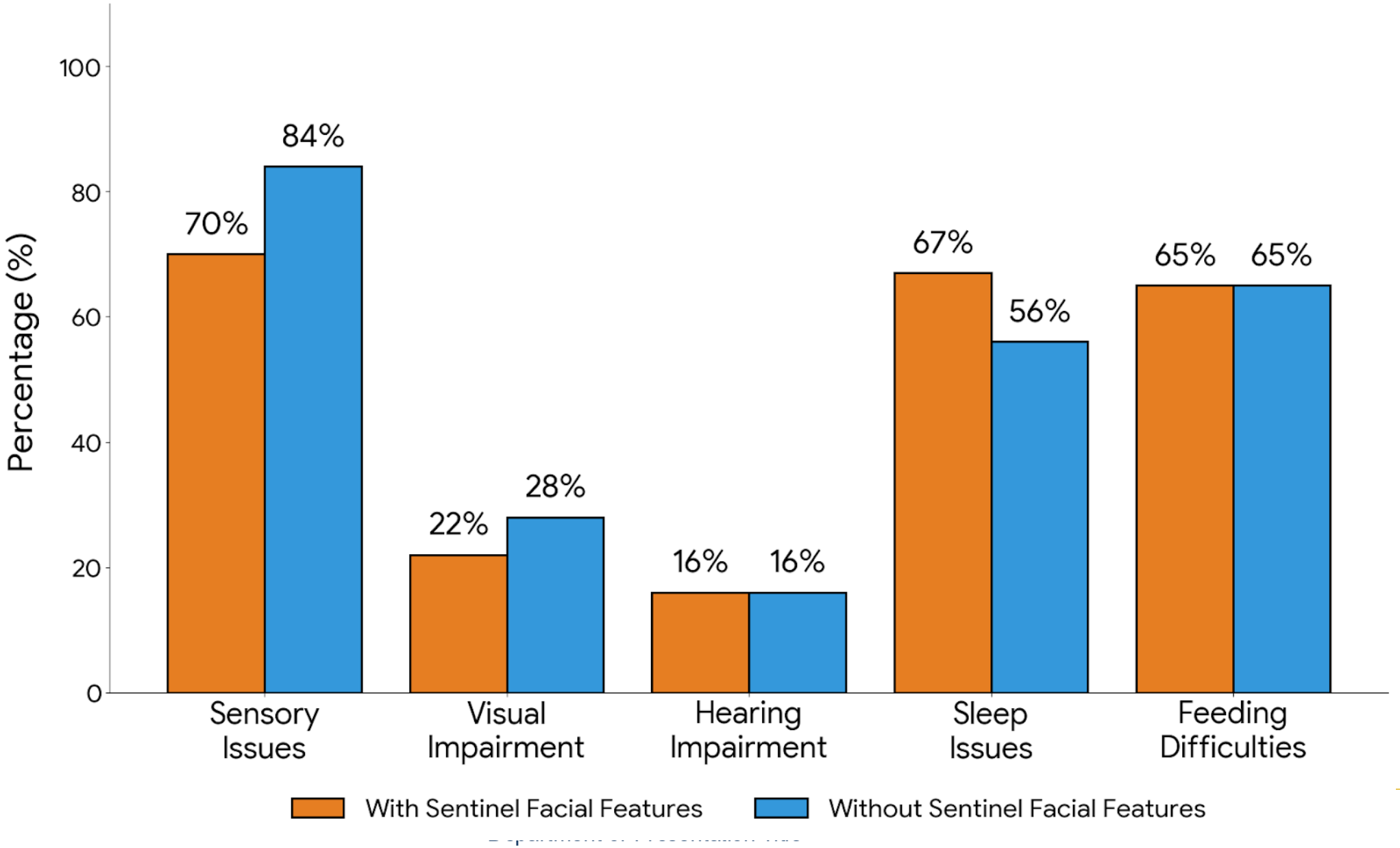
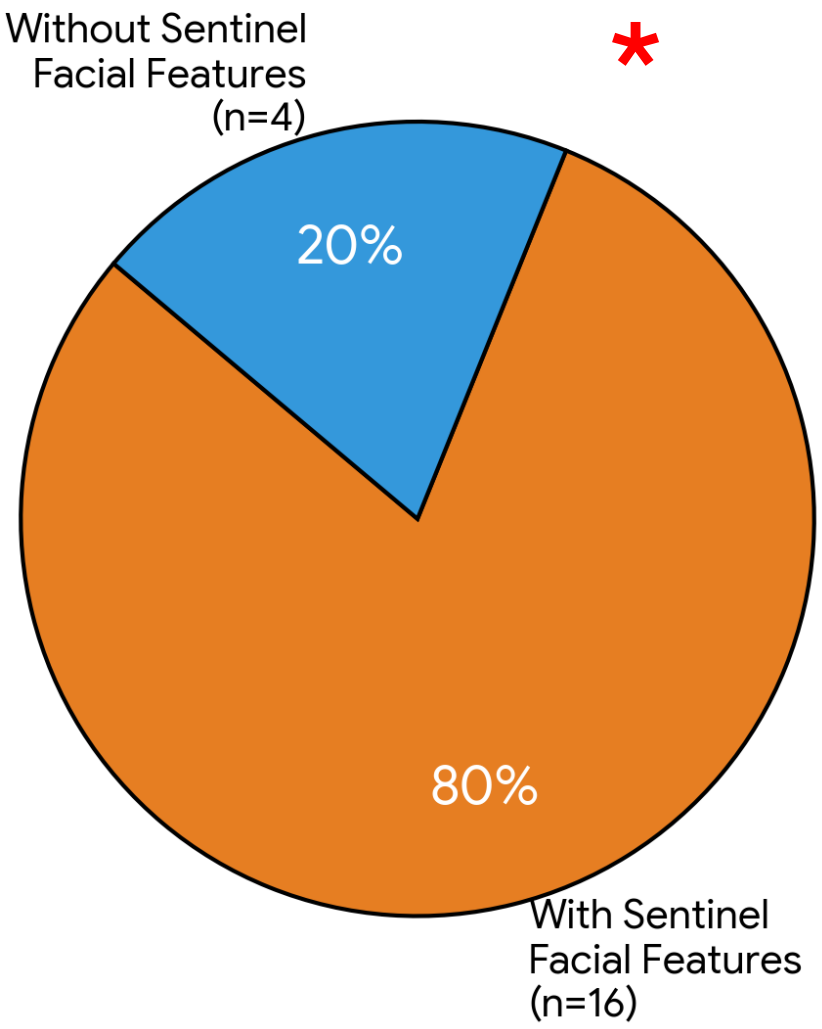
= with sentinel facial features = without sentinel facial features * p-value < 0.05

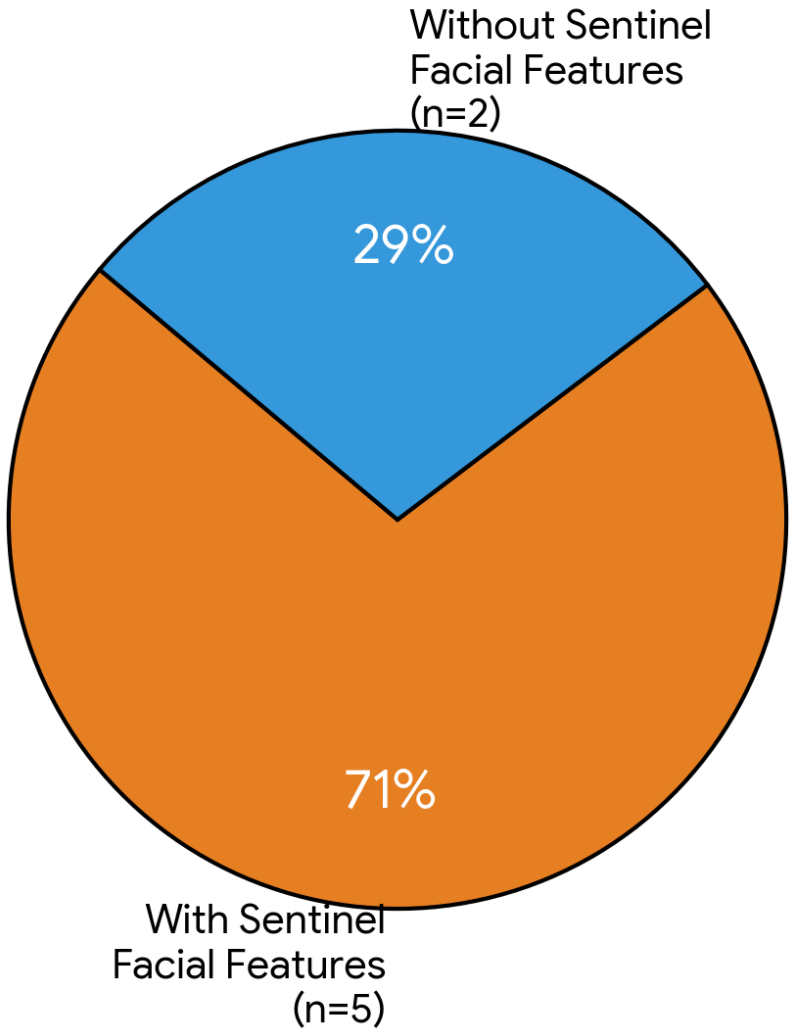
Co-occurring Health Variables by FASD Phenotype



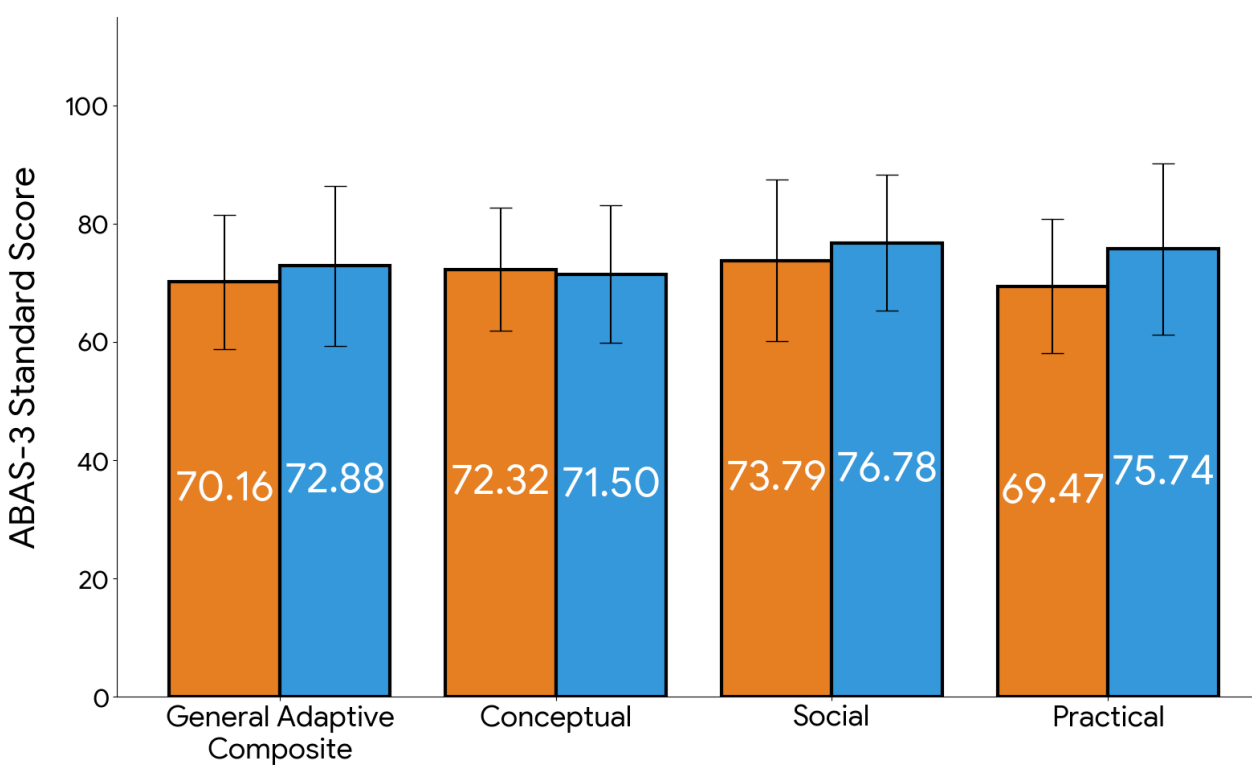
Distribution of Early Interventions Received (Total n=20)



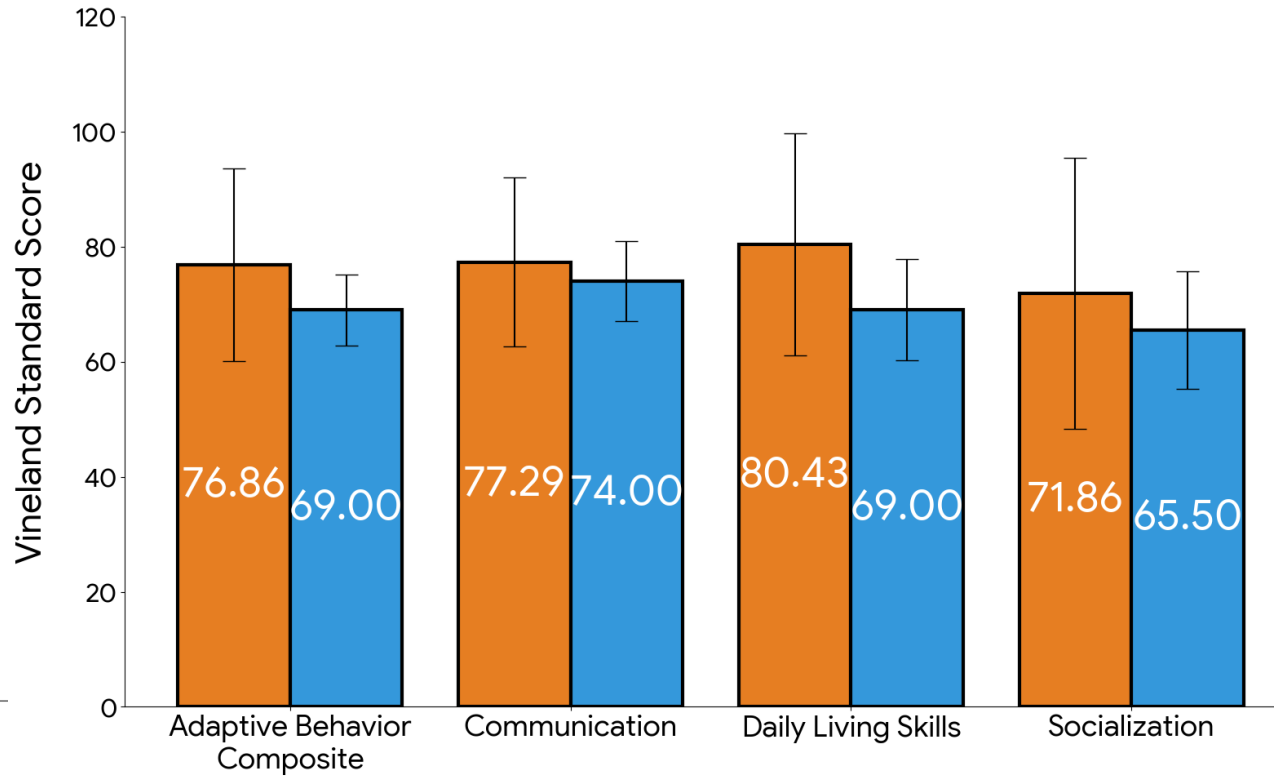
Distribution of Clinically Significant Cognitive Impairment (Total n=7)



ABAS-3 Scores by FASD Phenotype



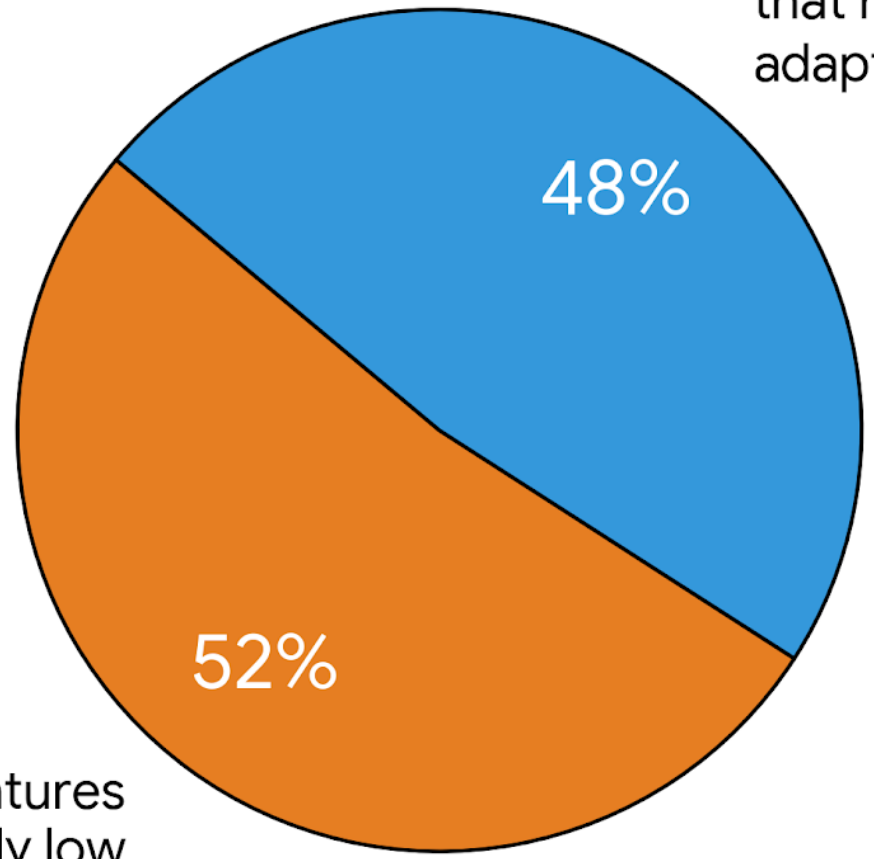
Vineland Scores by FASD Phenotype



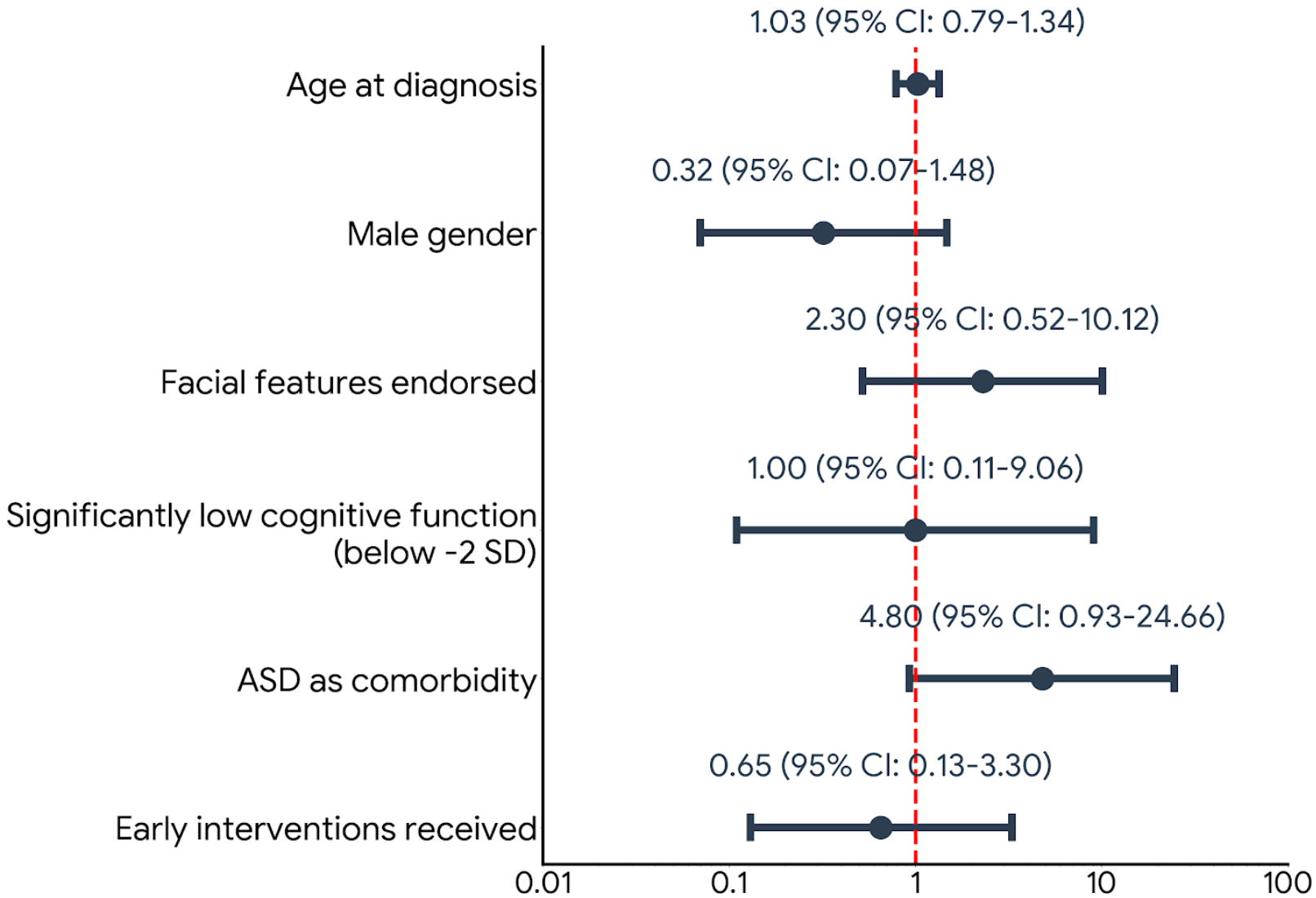
With Sentinel Facial Features

Without Sentinel Facial Features

Adaptive function assessment
either ABAS-3 or Vineland-3 (N = 50)



Factors Influencing Significantly Low Adaptive Function (n=43)



Limitations

- Small sample size
- Retrospective design
- Specialty clinic population
- Possible confounders: SES and parenting

Conclusions & Implications

- Substantial adaptive impairment occurs regardless of facial phenotype

- Facial features lead to earlier diagnosis and more intervention, yet functional struggles remain similar for those without features

- Early screening should be universal for suspected prenatal alcohol exposure, not just those with facial differences

Future Directions

- Larger cohort, multicenter studies
- Longitudinal adaptive outcome tracking
- Intervention-focused research

Acknowledgement

Q&A