

Polysubstance exposure in children with FASD: Results from APSU surveillance

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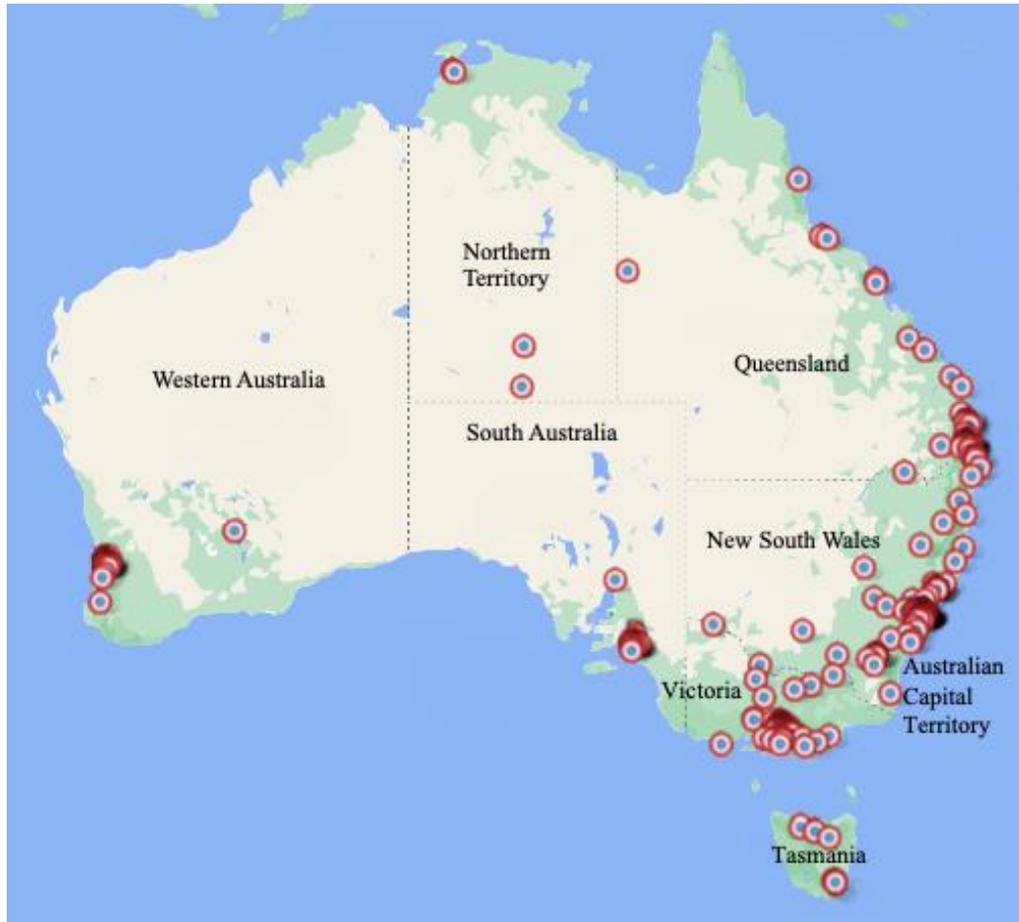
Polysubstance use in pregnancy

- ❑ Alcohol use in pregnancy remains a major public health problem, contributing significantly to the global burden of disease (harmful effects on pregnancy and child health).
- ❑ Polysubstance use during pregnancy typically includes use of one or more illicit substances in addition to alcohol and/or tobacco.
- Preclinical data suggest that prenatal polysubstance use may increase fetal harms ([Ross et al., Neuropsychopharmacology REVIEWS 2015](#))
- One in five women engages in polysubstance use during pregnancy in the U.S. ([Board et al., Drug Alcohol Depend 2023](#))
- 26% of Australian pregnant women knowingly use multiple substances, including alcohol, tobacco or illicit drugs. ([National Drug Strategy Household Survey 2022–2023](#))

Aim

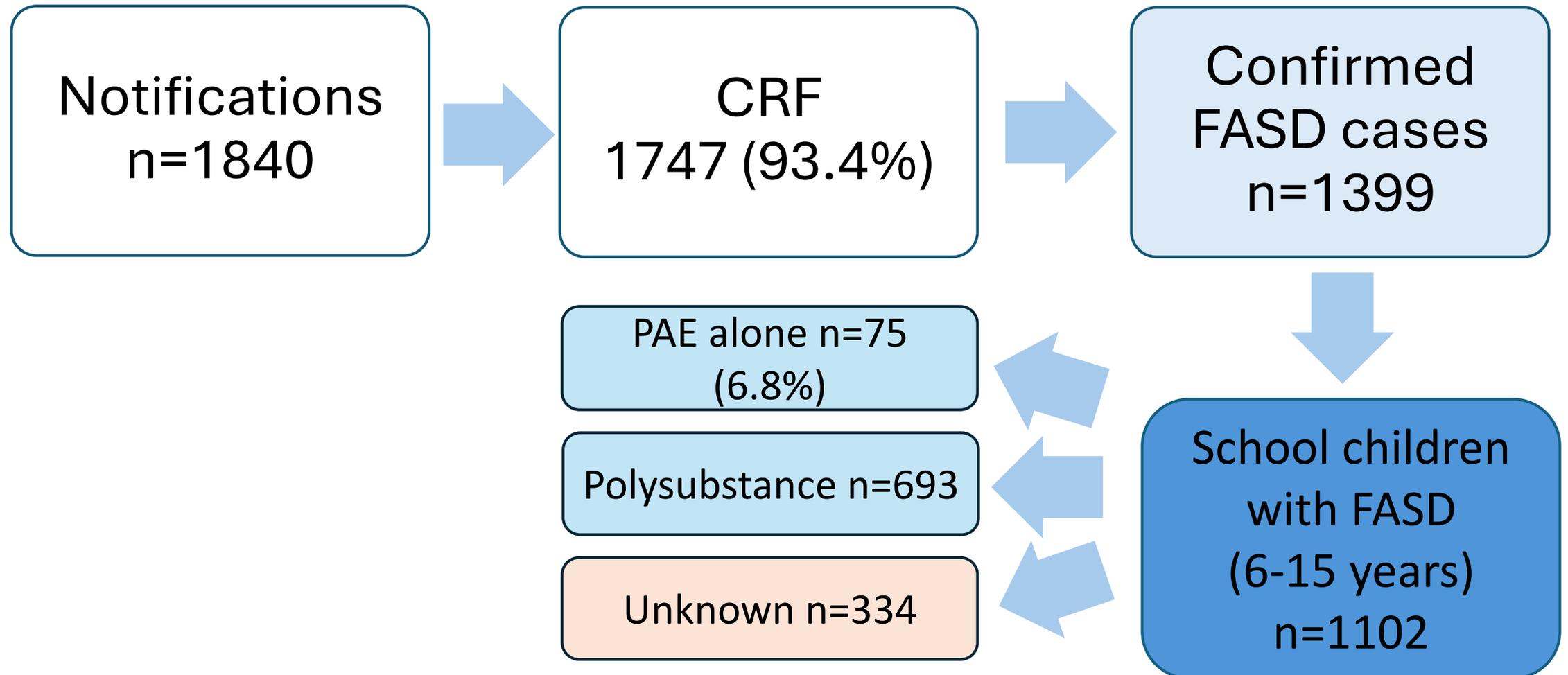
- to examine and compare neurodevelopmental impairment and other adverse outcomes in school-aged children with FASD - with either prenatal exposure to alcohol alone or with polysubstance exposure.

APSU surveillance mechanism



- ❑ National prospective, active, surveillance system, using monthly reporting from paediatricians (n~1400).
- ❑ New diagnoses of FASD (incident cases) in children aged <15y.
- ❑ Confirmed cases determined using the 2016 (2020) Australian Guide to Diagnosis of FASD.
 - Prenatal Alcohol Exposure (PAE).
 - Severe neurodevelopmental impairment (3 or more domains).
 - With/without facial features (short palpebral fissures, thin upper lip, flat philtrum), congenital anomalies, growth failure.
- ❑ Case report form (CRF) requesting information from clinicians on prenatal alcohol and other substance exposure, postnatal factors, and concurrent diagnoses.

Surveillance overview (1 Jan 2015 -31 Dec 2024)



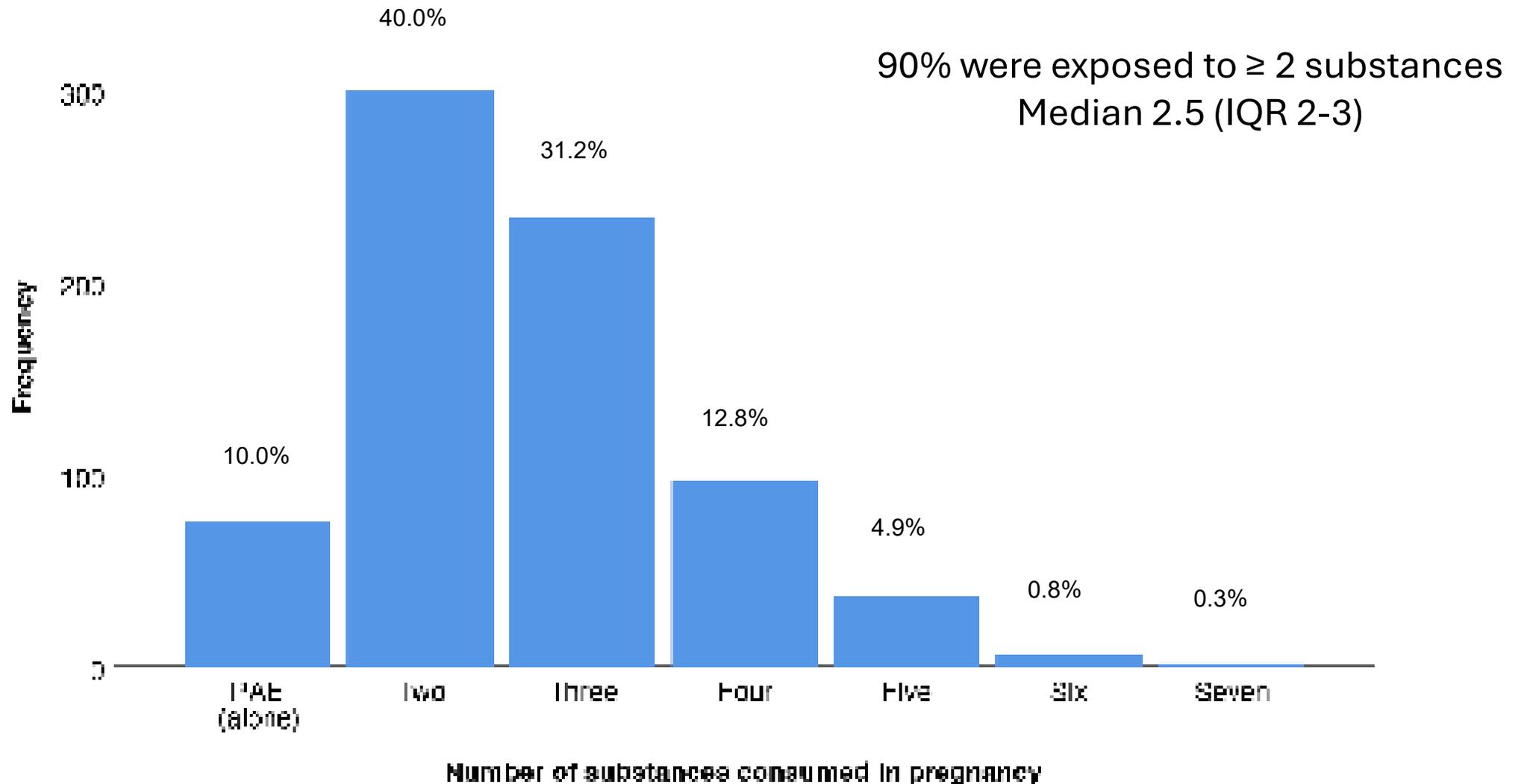
Demographic characteristics: school children with FASD

Characteristics	N= 768 (%)
Median age at diagnosis in years (Range)	9.5 (6.0 – 14.96)
Gender	
Male	500 (65.1)
Aboriginal and/or Torres Strait Islander	401 (55.9)
Primary carer	
Foster	316 (41.1)
Extended family, friends, kinship	247 (32.2)
Biological family	174 (22.7)
Group home or child protection	23 (3.0)
Juvenile justice	1 (0.1)
Unknown	7 (0.9)

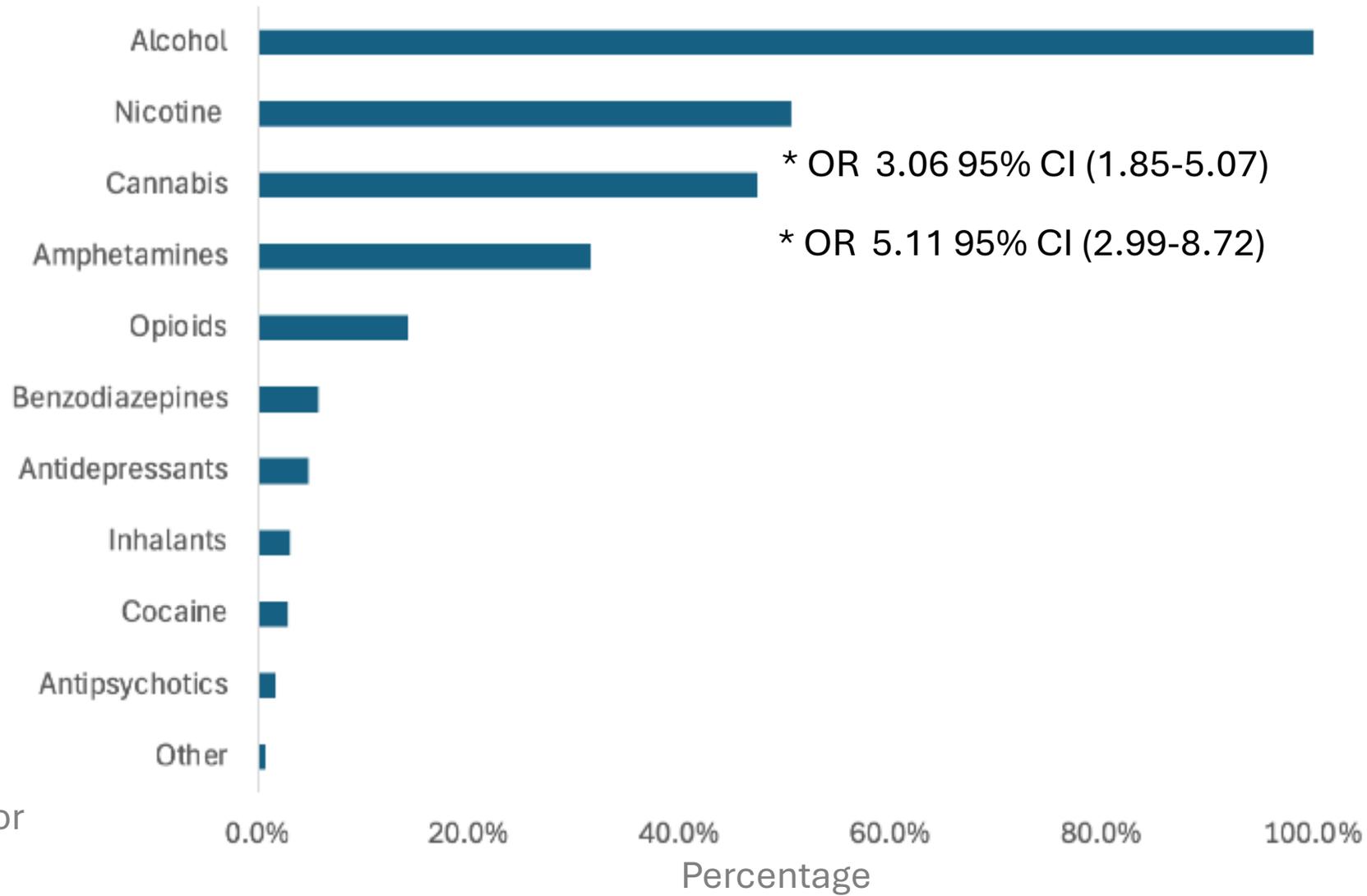
Demographic characteristics: school children with FASD

Characteristics	N= 768 (%)
Accessibility/remoteness index of Australia (ARIA+)	
Major cities	387 (50.4)
Inner regional	200 (26.0)
Outer regional	71 (9.2)
Remote	55 (7.2)
Very remote	36 (4.7)
Unknown	19 (2.5)
FASD diagnosis	
FASD with 3 SFF	88 (11.5)
FASD with <3 SFF	662 (86.2)
FASD (facial features not assessed)	18 (2.3)

Number of substances



Substances used in pregnancy



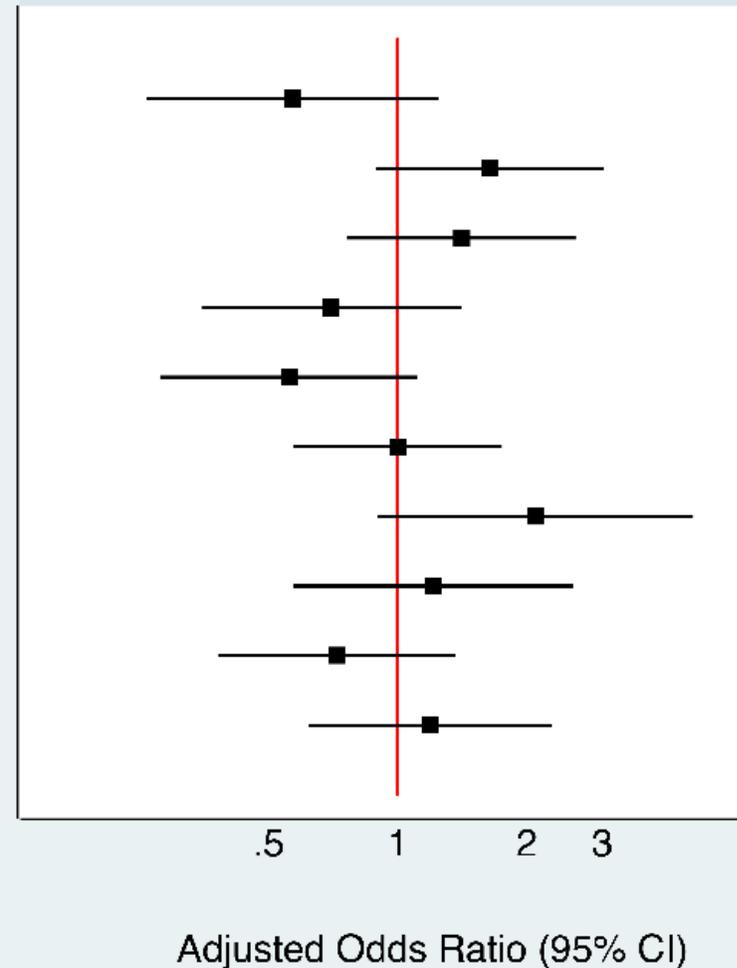
* Models adjusted for remoteness index.

Neurodevelopmental function

Severe neurodevelopmental domains

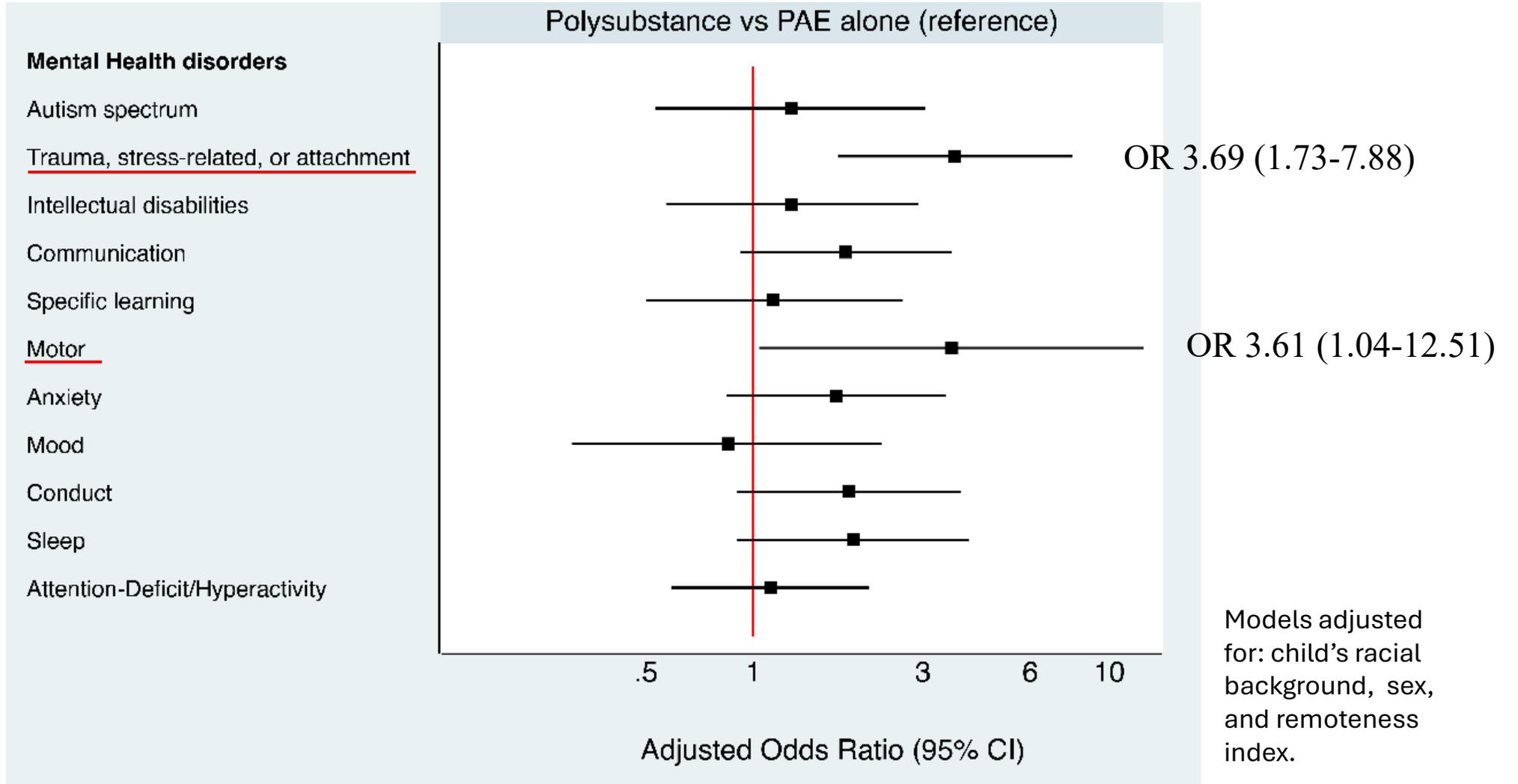
- Attention
- Executive function
- Adaptive behaviour/social skills/social communication
- Academic achievement
- Language
- Cognition
- Motor skills
- Affect regulation
- Memory
- Brain structure/neurology

Polysubstance vs PAE alone (reference)



Models adjusted for: child's racial background, sex, and remoteness index.

Co-morbidities



Characteristics

Clinical features

3 Sentinel facial features

Clinical evidence of neurological abnormality

Height restriction

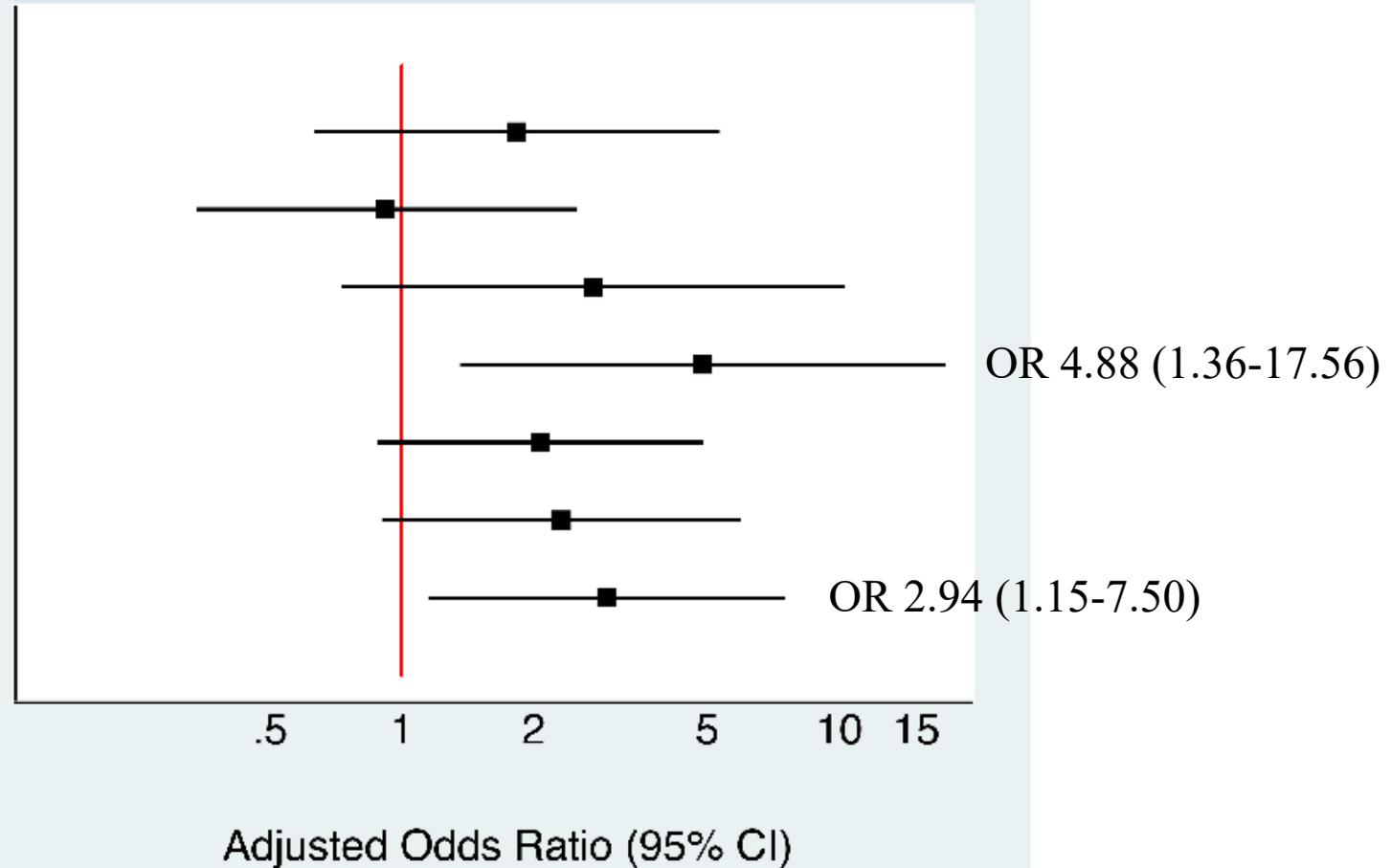
Weight restriction

Microcephaly

Major congenital anomalies

Minor congenital anomalies

Polysubstance vs PAE alone (reference)



Models adjusted for: child's racial background, sex, and remoteness index.

Conclusion

These results highlight the importance of :

- Asking about substance use during preconception care.
- Providing advice to support healthy pregnancies and mitigate or prevent the adverse health effects of polysubstance use for pregnancy outcomes, the mother and the infant.
- Referral for specialist care.
- Standardised prenatal screening should be extended beyond alcohol to include illicit substances (Substance Use Risk Profile-Pregnancy (SURP-P), 4P's Plus, and NIDA Quick Screen-ASSIST).