A meta-analysis of the prevalence of ADHD in incarcerated populations.

Susan Young, Debby Moss,
Ottilie Sedgwick, Moshe Fridman
& Paul Hodgkins.

What is the rate of ADHD in prison?

- Estimates vary, although generally suggest a higher prevalence than the general population.
  - Differing methodology – clinical interview? Self-report screens?
  - Gender
  - Age – Juvenile? Adult?
  - Geographical location
- Greater understanding of "the problem" can inform treatment provision, associated economic costs etc.

Method

- OvidSP Medline, EMBASE, PscINFO and Social SciSerch
- ADHD; attention deficit disorder; [EMTREE] crime; criminals; criminology; criminal behaviour; criminal justice; criminal law; court; criminal psychology; delinquency; juvenile delinquency; gang; legal evidence; legal procedure; police; legal liability; mandatory programs; violence; prisons; jurisprudence; punishment; offender; drug abuse; drug misuse.
- Inclusion/Exclusion
  - English language only
  - Articles published pre-1980 excluded
  - No animal studies
  - Only peer-reviewed (i.e. no theses)
  - Review articles excluded (reference lists examined)
  - Articles with no abstract excluded unless title suggested relevance

42 studies included

Data Extraction

Study Location

Age

Gender

Design
(Screening/Interview)
(Current/Retrospective)

Prevalence

Statistical Analysis

- Studies separated by strata to allow for studies reporting on both genders.
- Mixed model which utilised **fixed effects** for covariates (gender, age, location, design, diagnostic method), and **random effects** for study.

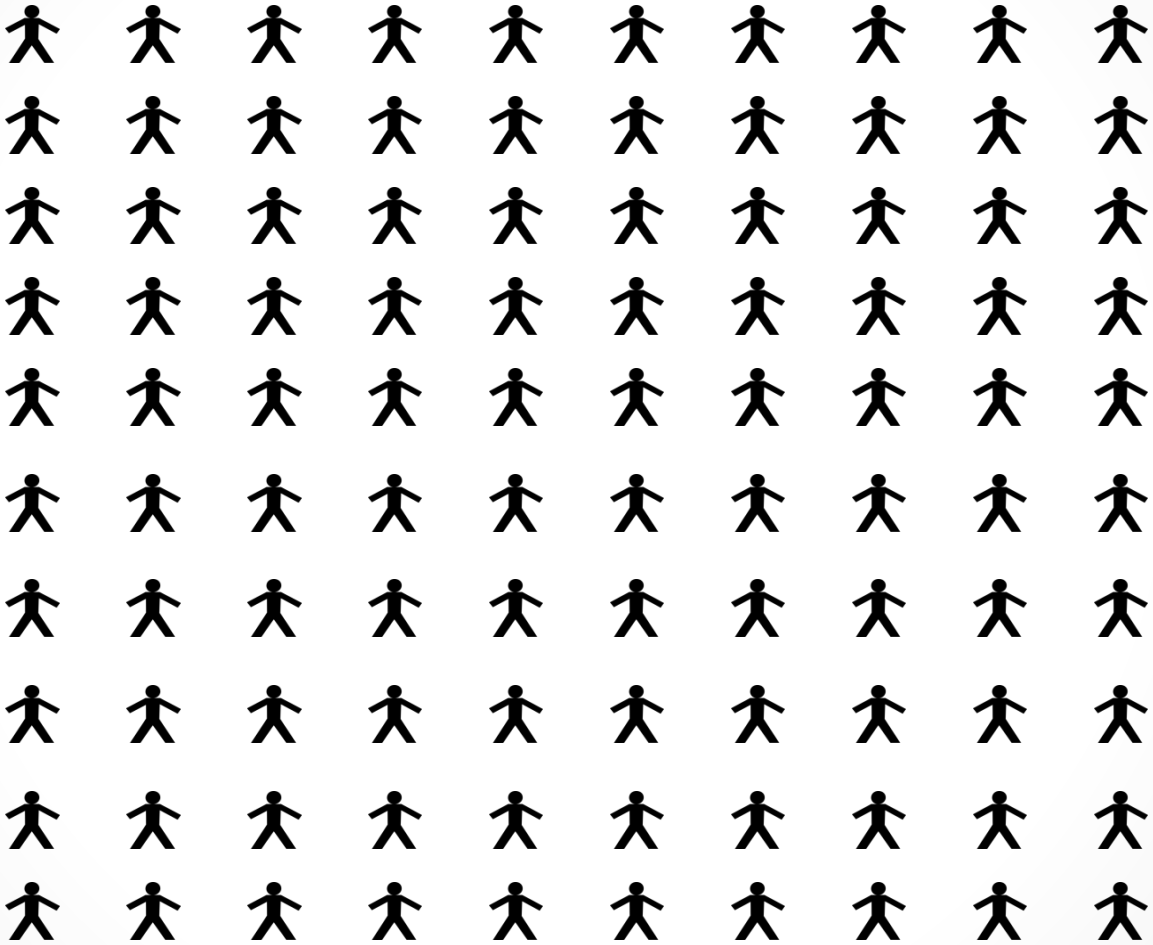
- Model fitted for interactions

- Also conducted a sensitivity analysis to estimate the sensitivity of results to diagnostic method
  - Only studies utilising diagnostic interview included in this model (30 strata)

Screens significantly over-estimate prevalence

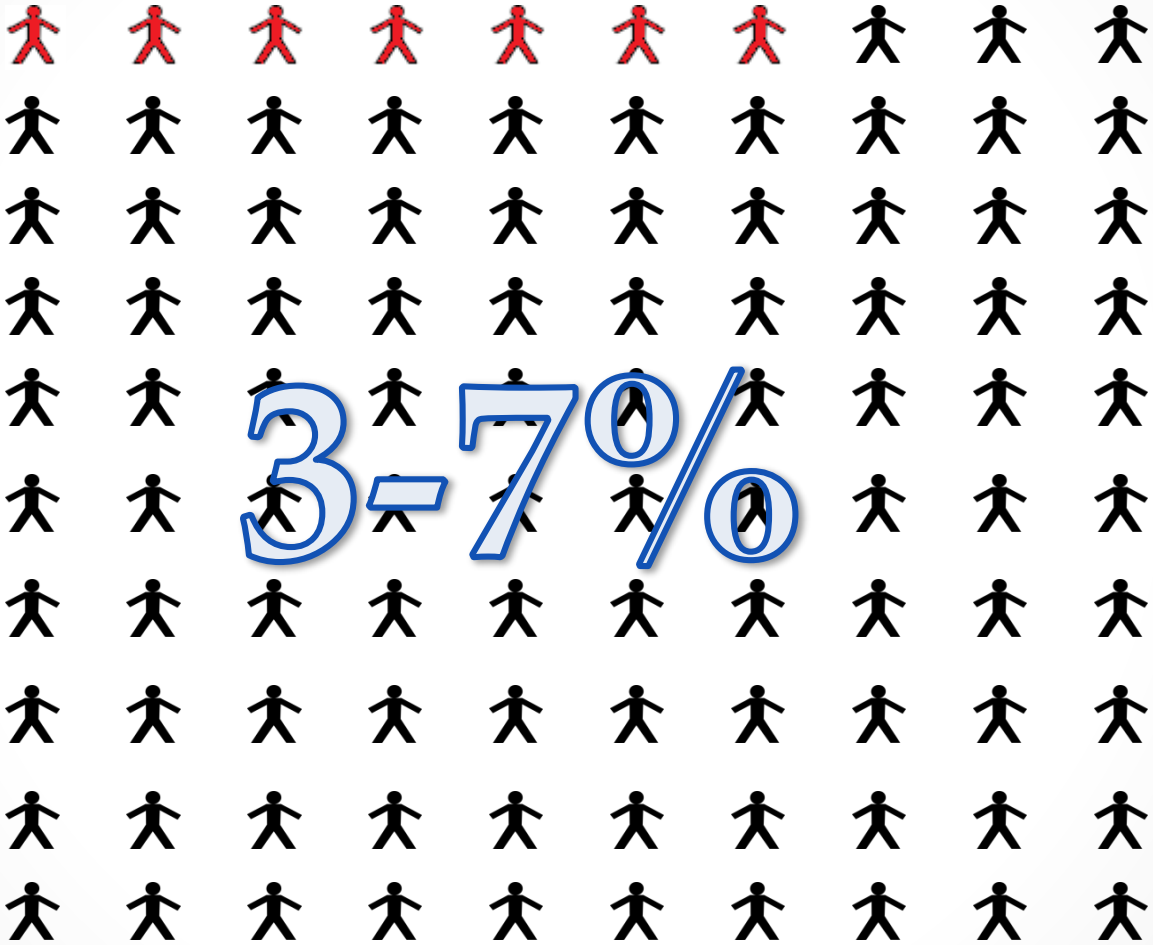
So going forward used ONLY diagnostic interview data

YOUTHS (UNDER 18)



YOUTHS IN THE COMMUNITY WITH ADHD

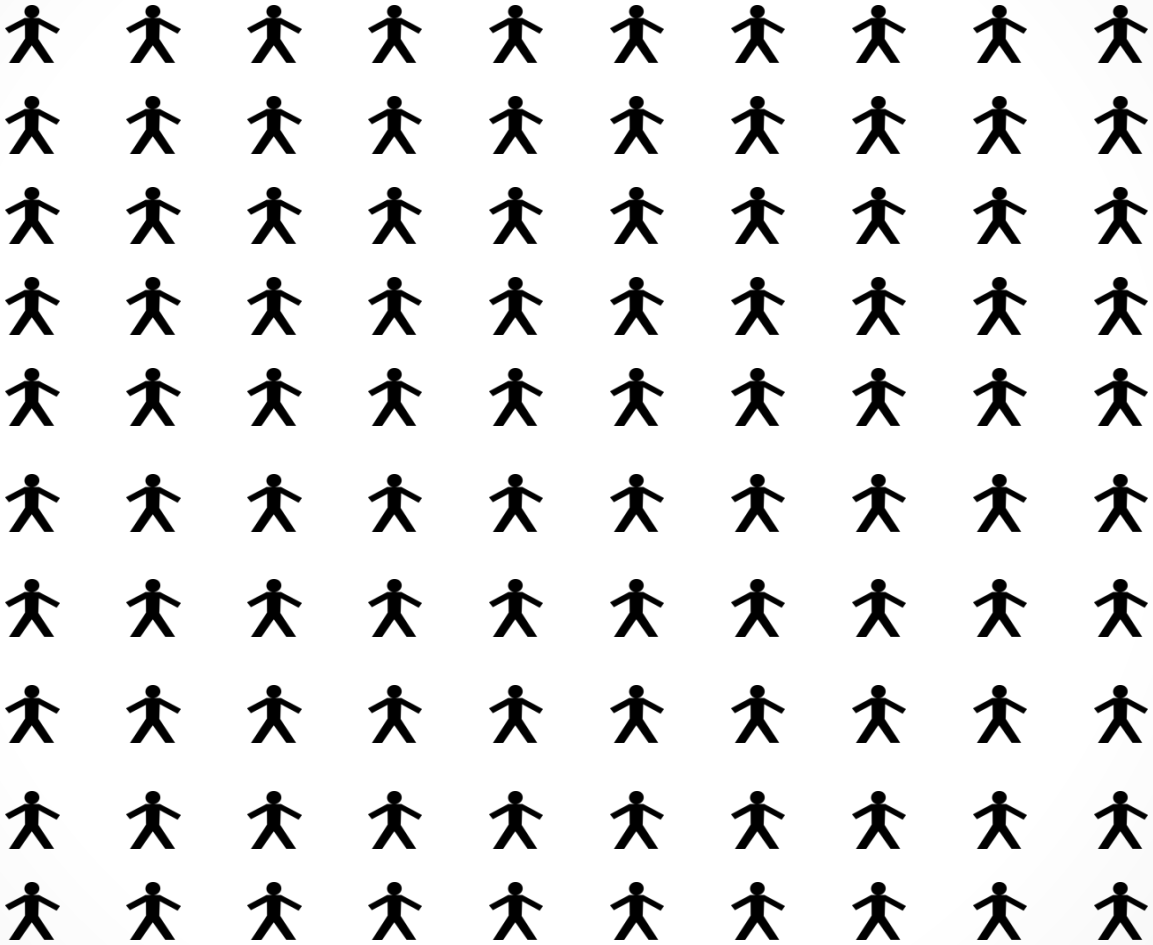
PUBLISHED ESTIMATES



INCARCERATED YOUTHS WITH ADHD

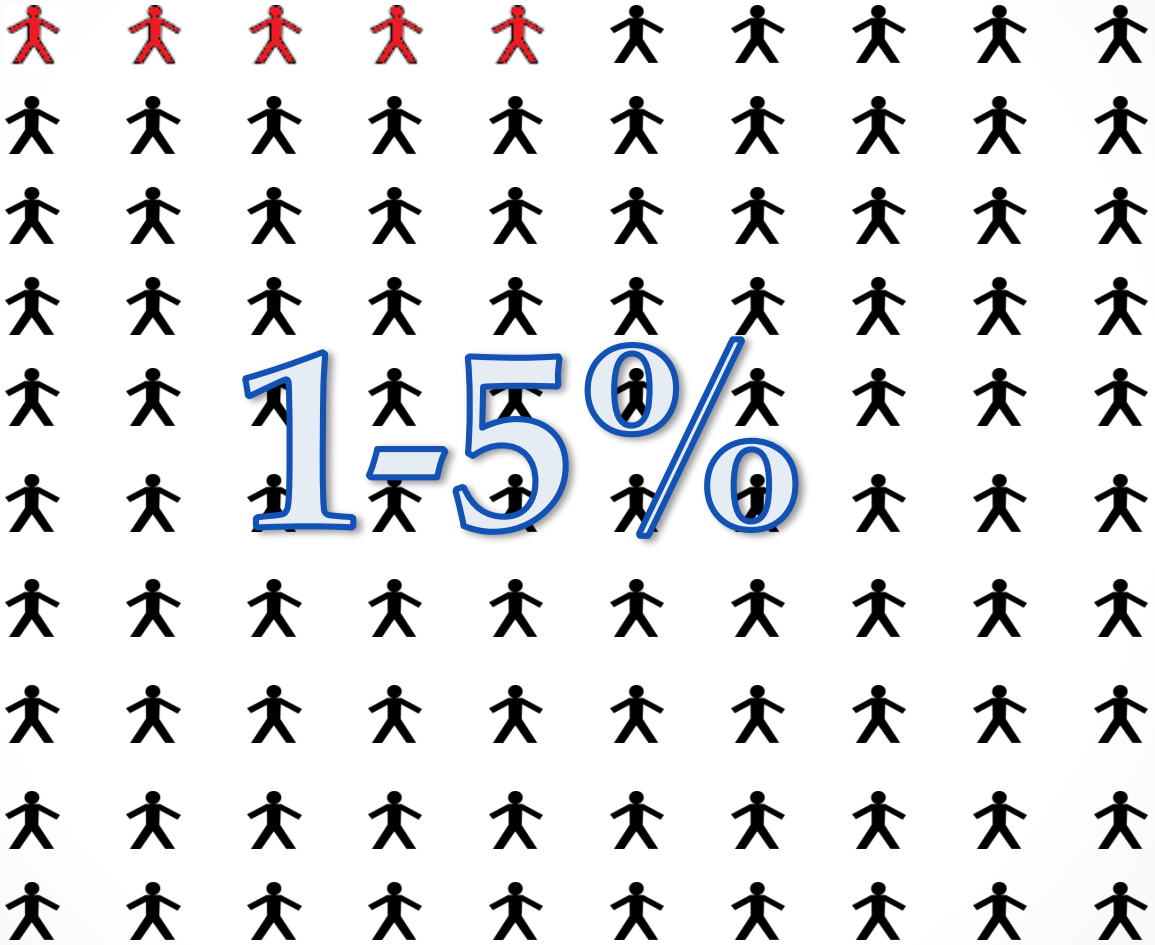
FROM META-ANALYSIS

ADULTS



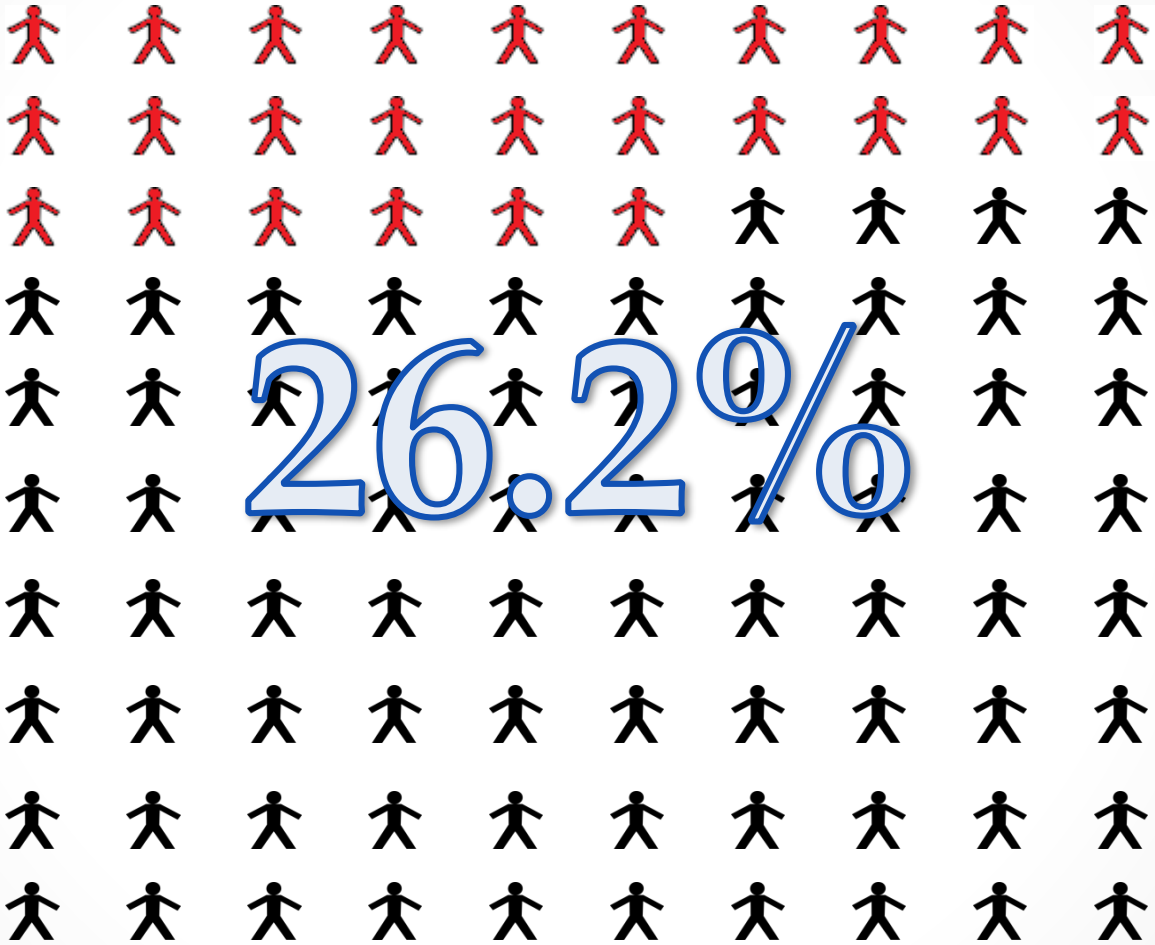
ADULTS IN THE COMMUNITY WITH ADHD

PUBLISHED ESTIMATES

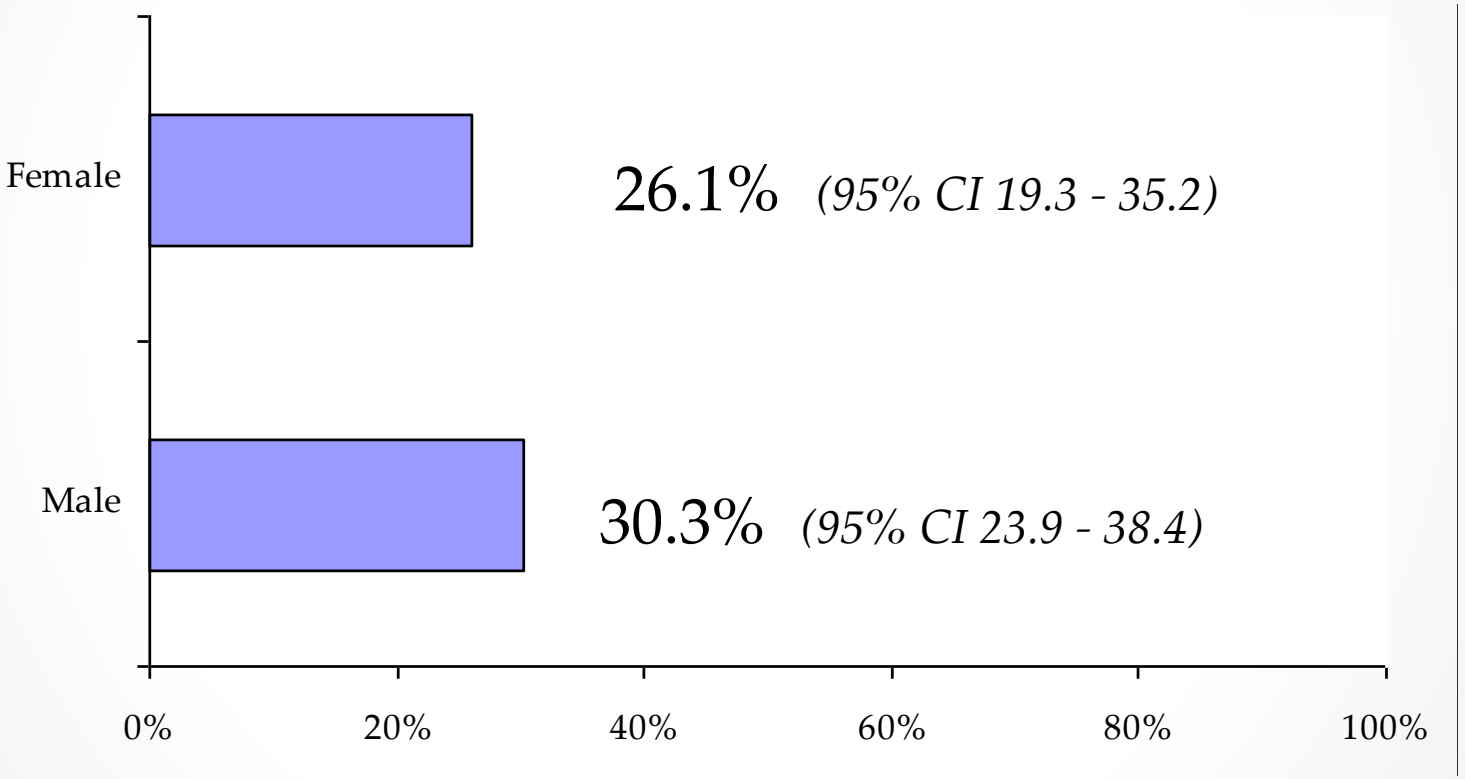


INCARCERATED ADULTS WITH ADHD

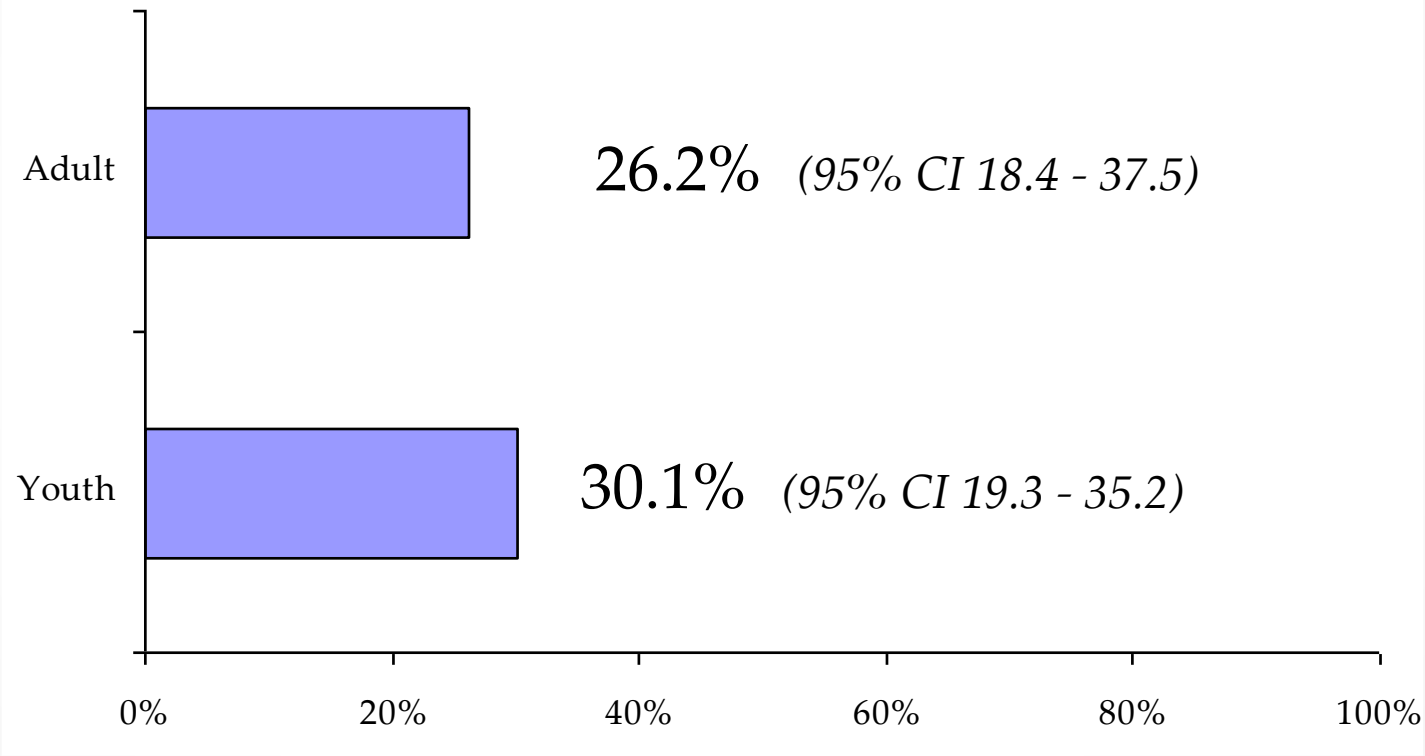
FROM META ANALYSIS



Gender



Youth vs. Adult



Gender x Age Interaction

p=.242

No interaction

- For people incarcerated with ADHD, there is no effect for:
  - Age
  - Gender
  - Age x Gender Interaction
- This is in contrast with community estimates in which there is an increased prevalence in males and in youths.

Geographical Location

Significantly differ between countries (15 countries, $p<0.0001$) highest in Sweden, lowest in Brazil

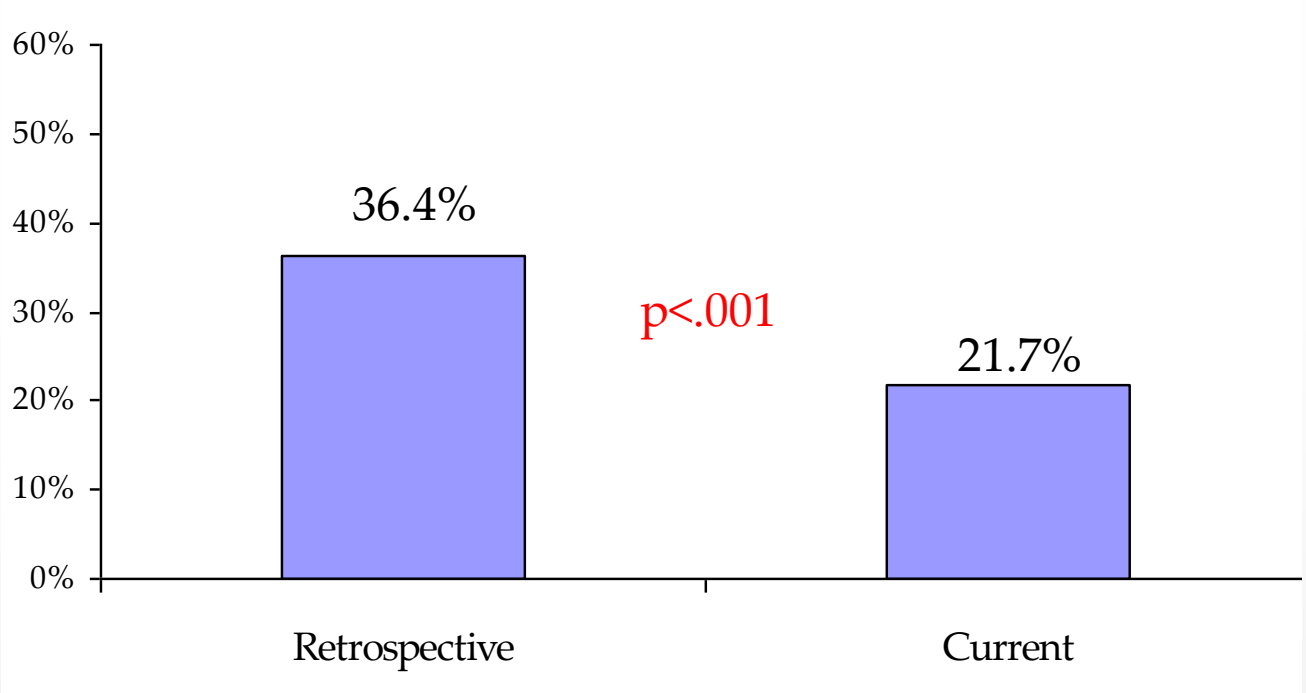
Geographical Location

However, not significantly different when grouped into regions:

North America vs. Europe vs. Other

Retrospective vs. Current Youth Diagnoses

- Retrospective assessments of adults for the presence of childhood ADHD
  - Requires the self-report of childhood symptoms in adulthood



Methodological Findings:

- Screening measures for ADHD tend to overestimate the actual prevalence. There are a high number of false positives
  - Number of false negatives not yet known
- Retrospective assessment of childhood ADHD tends to overestimate the actual prevalence. Current diagnoses give a significantly lower estimate.

Conclusions

- When controlling for known confounders, ADHD is over-represented in incarcerated populations: there is a five-fold increase in youth populations, and a ten-fold increase in adults.
  - This is irrespective of age and gender
  - Sentencing considerations for women? Looked after children?
- Screening tools over-estimate the prevalence.
- Retrospective childhood diagnoses over-estimate the prevalence.