

# Adverse childhood experiences and cannabis use trajectories

## Results from a UK longitudinal cohort study

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# Cannabis use

- Globally, the most commonly used internationally regulated drug
- Cannabis use is prevalent amongst adolescents; estimated lifetime prevalence 40-70% in different countries
- Associations with, and possible causal role in development of, psychosis, depression and anxiety
- Associations with mental health outcomes stronger when use is frequent, and when onset of use is earlier



# Adverse Childhood Experiences (ACES)



## 10 “classic” ACES

- Physical abuse
- Sexual abuse
- Emotional abuse
- Emotional neglect
- Bullying
- Household substance use
- Violence between parents
- Parent mental health problems/suicide
- Parent convicted of an offence
- Parental separation

# Adverse Childhood Experiences (ACES)



- Associated with increased risk of mental health problems and addiction (along with a range of negative physical and social outcomes)
- Emerging as a key focus of public health intervention
- Experiencing “four or more” ACEs generally seen as an indicator of increased risk



**Methods:  
The Avon Longitudinal  
Study of Parents and  
Children (ALSPAC)  
cohort**

**AKA  
“The Children of the  
90s”**

# ALSPAC: Children of the 90s

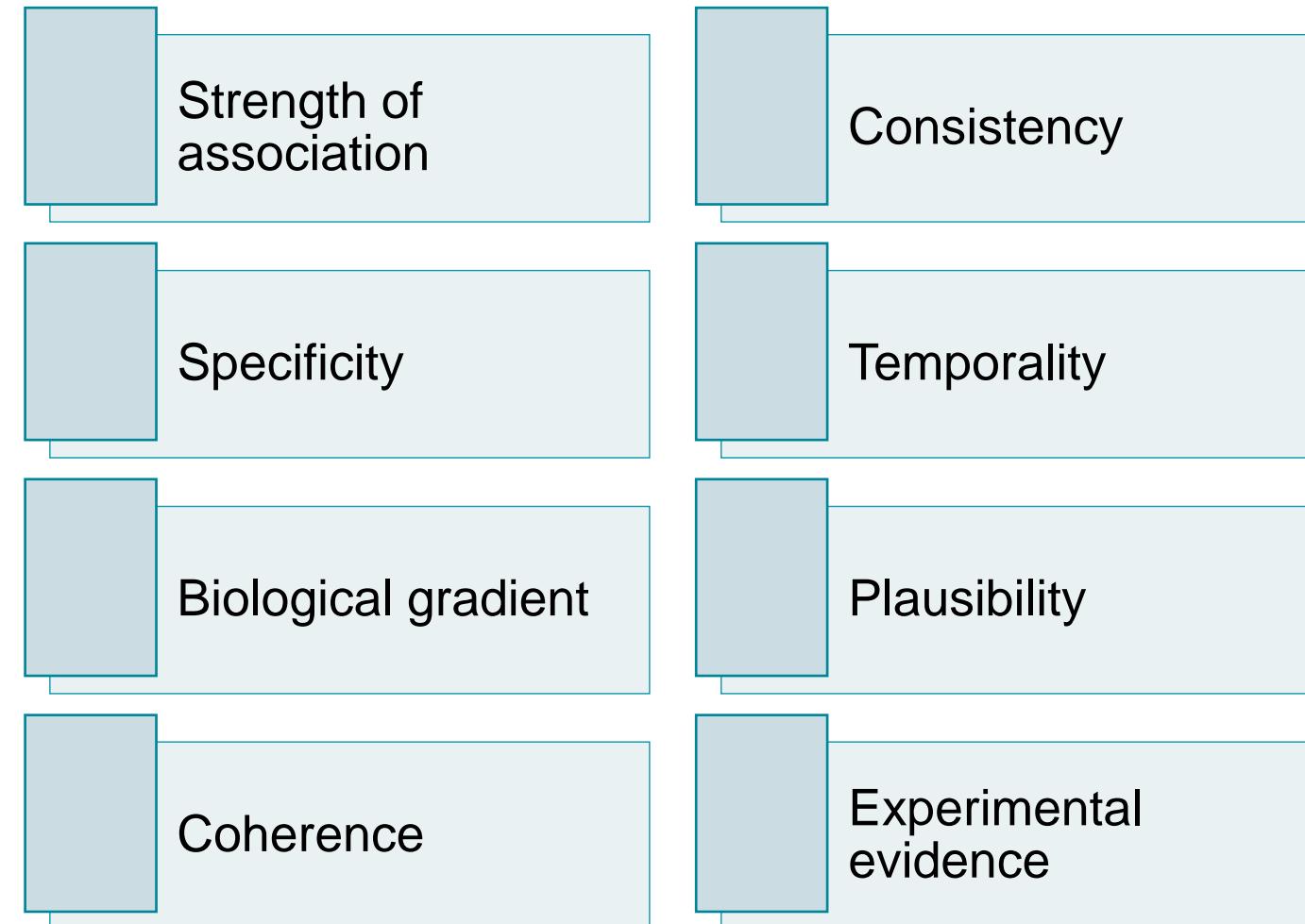


- Prospective population-based birth cohort study: recruited parents of ~14,000 children born 1991-1992 in South-West England
- Parents, grandparents and children of participants (COCO90s)
- Annual assessment: health, lifestyle and biological factors
- Self completed questionnaires
- Hands on clinic assessment
- Linkage to external records e.g. health records
- Biological samples
- Genetics



# Rationale

- To infer causality, we need the following criteria to be met (Bradford Hill)



# Rationale

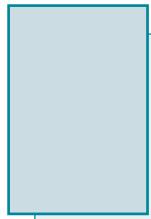
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Strength of association



Consistency



Specificity



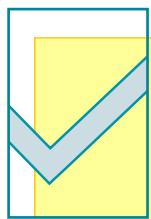
Temporality



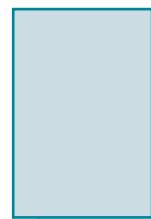
Biological gradient



Plausibility



Coherence

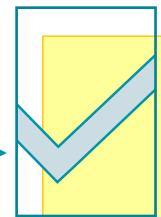


Experimental evidence

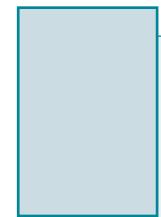
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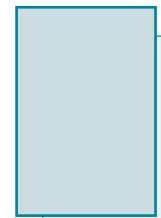
Using regression models



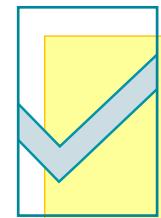
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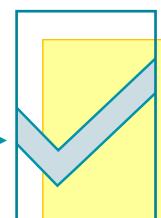


Specificity

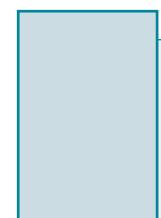


Temporality

Looking at all 10 ACEs

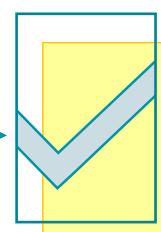


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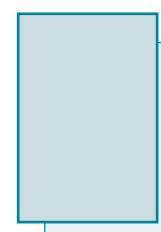


Plausibility

Considering confounding



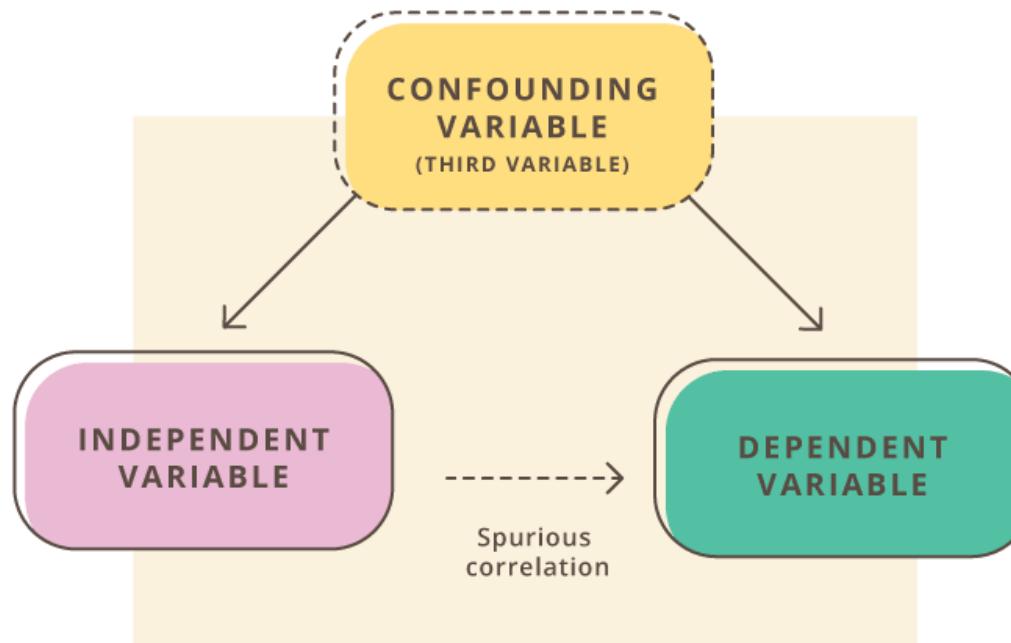
Coherence



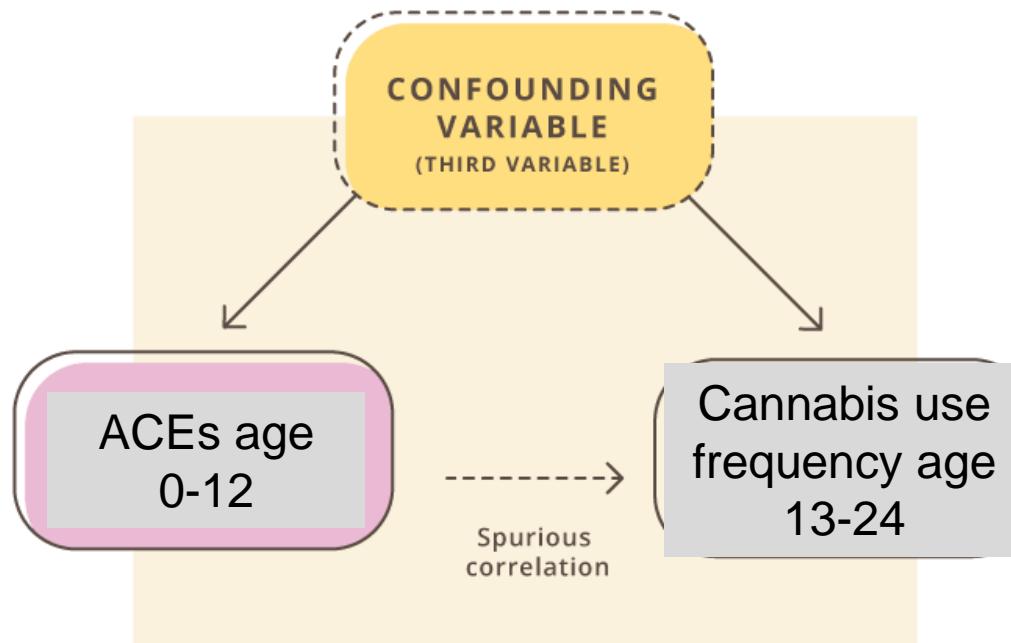
Experimental evidence

Using longitudinal data:  
ACEs 0-12  
Cannabis 13-24

# Children of the 90s



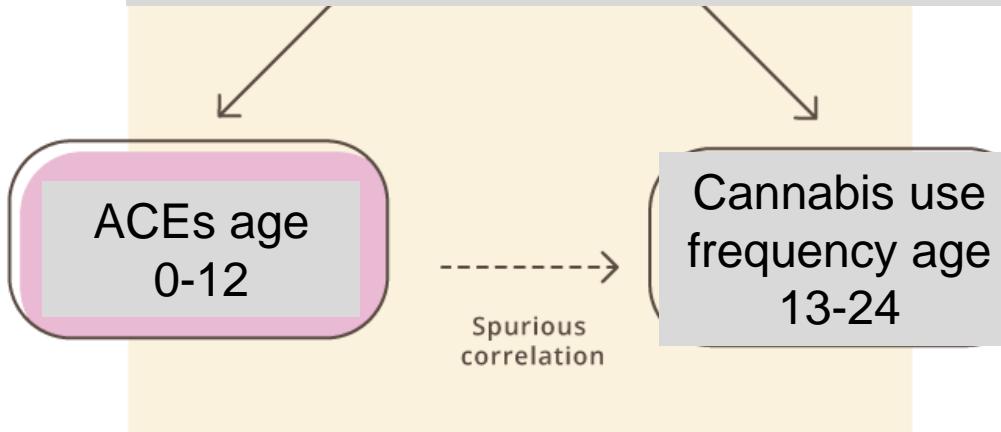
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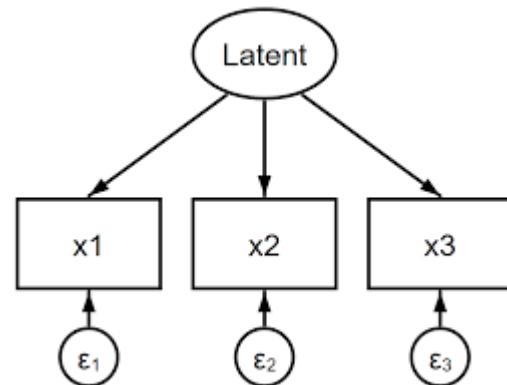


- Maternal mental health (lifetime, reported during pregnancy)
- Partner mental health (lifetime, reported during pregnancy)
- Maternal drug use during pregnancy
- Partner drug use during pregnancy
- Maternal financial difficulty during pregnancy
- Socioeconomic position age 0-12
- Sex at birth
- Polygenic risk score for cannabis use



# Adolescent cannabis use (N=5249)

- Used latent class methods, which allow us to identify trends in the data
- Derived as never using cannabis /occasionally using /regularly (weekly or more) using
- N=5249



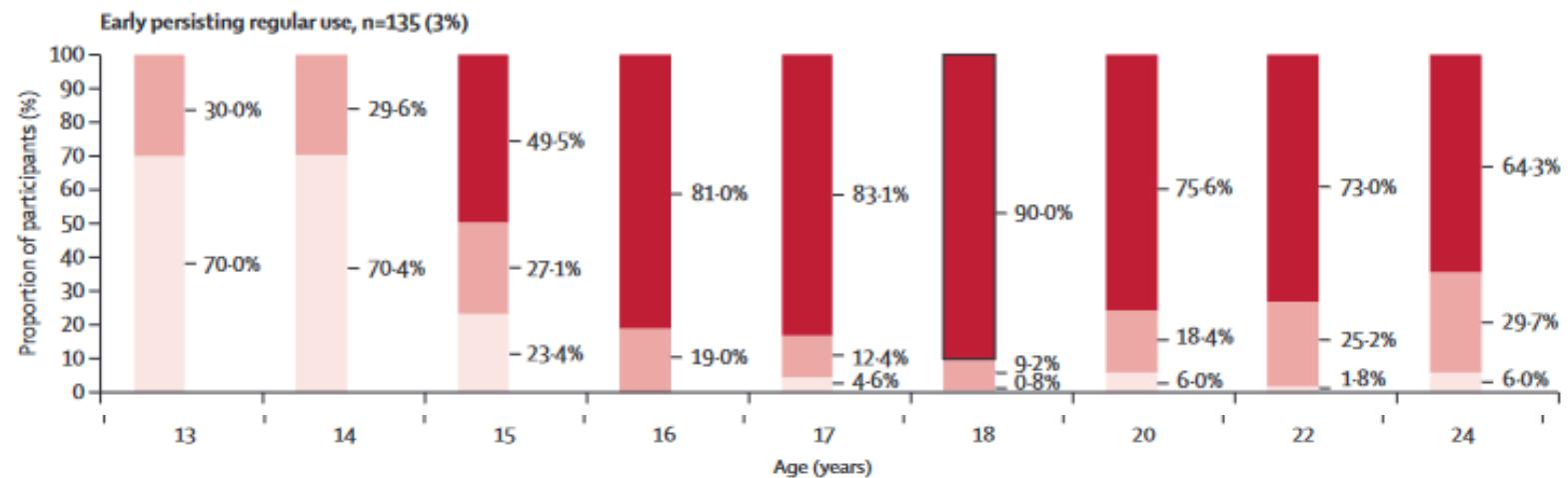
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  - Low/no use
  - Early persisting occasional use
  - Early persisting regular use
  - Late onset occasional use
  - Late onset regular use

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## **Adverse childhood experiences between age 0-12 years could lead to regular and early onset use of cannabis in teenage years**

Children who reported these experiences were at greatest risk of frequently using cannabis as teenagers:

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Four or more adverse childhood experiences

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4+ ACEs ARR 3.15, 95% CI 1.81-5.50

2-3 ACEs ARR 1.46, 95% CI 0.91 – 2.35

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And these experiences also increased risks of frequent teenage cannabis use:



Parent mental health problems or suicide attempt

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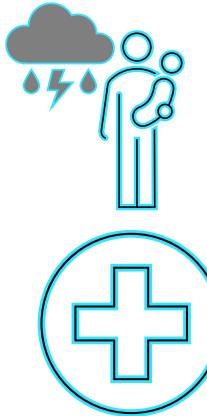


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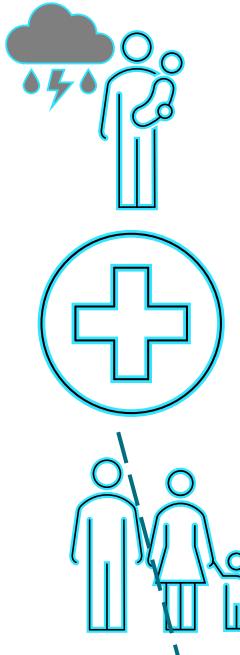


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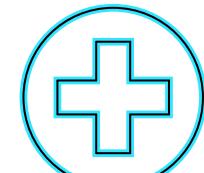


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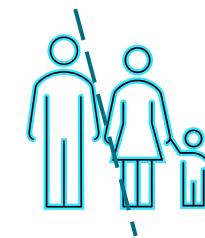
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Parent separation



Experiencing emotional abuse

# Limitations

- Exposure to ages 0-12 years - potentially have proximal effects of exposure to ACEs
- ACEs may be under-reported
- ALSPAC attrition - those who took part at both ages 13-18 and 20-24 more likely to be:
  - white
  - female
  - more affluent

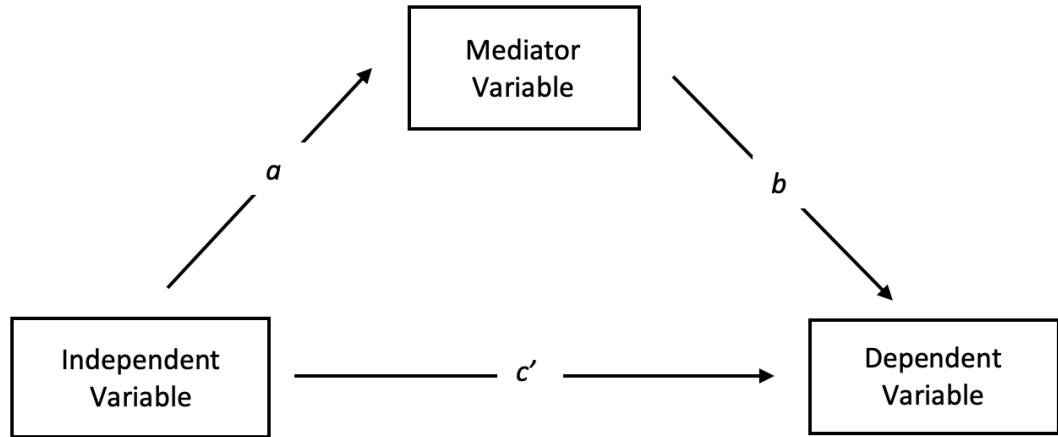
# Conclusions

- Experiencing through multiple ACEs between 0 years and 12 years increases the risks of early onset regular cannabis use in adolescence
- May be a pathway from ACEs to mental health problems in adulthood
- Plausible pathways from (distal) ACEs to adolescent cannabis use are:
  - Substance use availability
  - Parenting practices

# Implications

- Public health efforts to reduce ACEs could reduce regular cannabis use during adolescence
- Further focus on targeting intervention on children growing up in households with substance use/alcohol abuse
- Supportive interventions across the life course; parenting interventions for substance use or abuse are targeted later in childhood (typically at the beginning of secondary school), but the age of exposure in the present study was to ACEs at age 0–12 years, suggesting that interventions targeted earlier in childhood might be promising
- Research into early interventions with parents during pregnancy and the postnatal stages to reduce childhood exposures to ACEs might be beneficial

# Nex steps



- How do ACEs fit in the relationship between cannabis use and mental health?
- A confounder?
- Other plausible option is that cannabis use is on the causal pathway between another exposure and an outcome

# Acknowledgements



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Professor Paul Moran

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