

Association between age of first methamphetamine use and retrospective self-reported childhood attention deficit hyperactivity disorder (ADHD) symptoms

An exploratory study in a clinical trial cohort for adults with methamphetamine dependence

Brendan Clifford, Robin Ousley, Rob May, Nick Olsen, Krista Siefried, Nadine Ezard

NCCRED

National Centre for Clinical
Research on Emerging Drugs



UNSW
SYDNEY



ST VINCENT'S
Better and fairer care. Always.

Declarations

I am employed at the National Centre for Clinical Research on Emerging Drugs (NCCRED) at the University of New South Wales (UNSW) and St Vincent's Hospital Sydney.

This study is a secondary analysis of the LiMA study, which was funded by a grant from the National Health and Medical Research Council (NHMRC APP1109466), with additional support from the St Vincent's Health Australia, NCCRED, UNSW, the Victorian Department of Health and Edith Collins Centre, Royal Prince Alfred Hospital.

NCCRED is supported by a grant from the Australian Commonwealth Department of Disability, Health and Aging.

Attention Deficit Hyperactivity Disorder

- DSM-5-TR¹ - a persistent pattern of inattention and/or hyperactivity-impulsivity that interferes with functioning or development
- Neurodevelopmental disorder beginning in childhood with several symptoms beginning in childhood that are clinically significant before 12 years old
- Inattentive / hyperactive-impulsive / combined
- Estimated prevalence of 7.4% in <18 year olds², approx. 50% persisting into adulthood³.

ADHD & Substance use disorders

- Studies of people with substance use disorders find rates of ADHD of 23 - 40%, compared with estimated 5% for general adult population¹
- Previous studies with people with methamphetamine use disorders find rates of approximately 20% of samples with ADHD²
- Exact mechanisms for high rates of co-morbidity still unclear
- Treatment of ADHD is protective for substance use related problems later³
- Earlier age of first substance use associated with greater risk of progression to substance use disorder⁴

Methods

- Secondary analysis of a clinical trial cohort¹
- LiMA study enrolled 155 people with methamphetamine use disorder using ≥ 14 s / 28 day of use
- Other inclusion criteria: current psychosis excluded, needed to be able to store medication safely, not current prescribed stimulant medication
- Mean days of use for the study sample: 24 / 28 days
- At baseline, age of first use of methamphetamine was collected, as was the Wender-Utah Rating Scale (WURS)

Methods

- Wender-Utah Rating Scale - a measure of self-reported ADHD symptomatology in childhood¹ collected at baseline
- 61-item, 45-item, **25-item** versions available
- 25 items examines three factors (disruptive mood/behaviours, inattention, anxiety) - scores from 0 to 100
- Cut-off score of 36 sensitivity of 96% and specificity of 96%¹
- Demographics and age of first methamphetamine use also collected at baseline
- Linear regression of age of first use and WURS score

Results

- 154 participants with complete data
- 80 (52%) WURS+(≥ 36)
- WURS+:
 - Younger (37.9 yrs vs 41.8 yrs)
 - higher rate of education completion at Year 10 or below

Measures	Total (n=154)	WURS < 36 (n=74)	WURS ≥ 36 (n=80)	p value ^a
Age in years , M (SD)	39.7 (9.4)	41.8 (9.2)	37.9 (9.3)	0.01
Gender, n (%)				0.23
Women	57 (37.0)	30 (40.5)	27 (33.8)	
Men	96 (62.3)	44 (59.5)	53 (65.0)	
Aboriginal status, n (%)				0.64
Aboriginal and/or Torres Strait Islander	15 (9.7)	6 (8.1)	9 (11.0)	
Neither Aboriginal nor Torres Strait Islander	137 (89.0)	67 (90.5)	70 (87.5)	
Prefer not to say	2 (1.3)	1 (1.4)	1 (1.3)	
Level of education, n (%)				0.01
Year 10 & below	71 (46.1)	24 (32.4)	47 (58.8)	
Year 12	22 (14.3)	12 (16.2)	10 (12.5)	
Trade/technical/vocational training	32 (20.8)	21 (28.4)	11 (13.8)	
University Degree	29 (18.9)	17 (23.0)	12 (15.0)	
Main Source of income, n (%)				0.70
Full time work	30 (19.5)	18 (24.3)	12 (15.0)	
Part time/casual work	19 (12.3)	10 (13.5)	9 (11.3)	
Self employed	5 (3.2)	3 (4.1)	2 (2.5)	
Retired	2 (1.3)	1 (1.4)	1 (1.3)	
Family support	1 (0.6)	1 (1.4)	0	
Pension or Temporary Benefit	87	37	50	
No income	10 (6.5)	4 (5.4)	6 (7.5)	

Results

- WURS+ (n=80, 52%) mean age of first use: **21.8 years** (SD 7.8)
- WURS- (n=74, 48%) mean age of first use: **24.2 years** (SD 9.8)
- Linear regression found a significant inverse relationship between age of first use and WURS so that **every 1 point increase in logWURS the age of first use decreased by 1.9 years** (95% CI -3.6 to -0.2; p = 0.027).

Limitations

- Exploratory secondary analysis and in a clinical trial cohort - selection bias
- ADHD treatment history not collected
- Methamphetamine started to enter Australian markets in late 1990s; limited supply could have impacted on age of first use for older participants
- Validity of WURS in populations using methamphetamine not well established - cut-off of 46 used in some clinical populations
- Intersection of effect of gender on ADHD diagnosis and substance use not explored in this study

Discussion

- Association of childhood ADHD and symptomatology and age of first methamphetamine use in people with dependence and high levels of methamphetamine use
- High rate of WURS+ participants (52%) in this sample - reflecting high rates of ADHD reported in literature
- Underlines importance of screening and treatment of co-morbid ADHD in people experiencing issues with their methamphetamine use

Thank You

In partnership with



NCCRED initiatives

