ICE AND ADOLESCENTS:

TRENDS AND TREATMENT

Kieran Palmer

Clinical Services Manager | Psychologist

Ted Noffs Foundation
METHAMPHETAMINES
AMPHETAMINE TYPE STIMULANTS

- **Stimulants**
  - General classification of drugs which describe their effect on the central nervous system
  - Stimulates heart rate, respiratory rate, blood pressure and body temperature
  - Effects are sought after in pharmaceutical applications (eg. drying up nasal passages)
  - Affect mood, behaviour, physical functioning and behaviour
FORMS

Methamphetamine

- **Powder**: Low purity (6% - 12%). Usually insufflated (snorted), absorbed into blood stream through mucous membranes in nose. Most ‘speed’ thought to be methamphetamine powder.

- **Base**: Medium to high purity (30% - 40%). Waxy compound. Usually dissolved in water or injected (consistency makes smoking or snorting difficult).

- **Crystal (ice)**: High purity (90% – 95%). Crystalized form, strongest and most potent. Usually inhaled (vapour) or injected.
PREVALENCE

- 2013 National Drug Strategy Household Survey:
  - No significant rise in methamphetamine use (2% of population)
  - Significant decrease in powder (51% - 29%)
  - Significant increase in crystal (22% - 50%)
Proportion of participants reporting drug as 'drug of greatest concern'

- Opiods
- Cannabis
- Alcohol
- Amphetamine-Type Stimulants
- Ecstasy or Related Drugs
- Cocaine
- Tranquilisers
- Inhalants
- Hallucinogens
- Other

**Methamphetamine and NOFFS**
**Patterns of Use**

- **Experimental**: short lived, associated with wider patterns of experimentation. Often don’t return to the drug.
- **Recreational**: usually socially or for leisure. Control over when the drug is used.
- **Circumstantial**: used for specific tasks
  - Physical: sport, night shift work, truck driving
  - Cognitive: study and learning
  - Behavioural: social confidence, sexual performance and pleasure
- **Binge**: Prolonged and intense use (1 – 5 days) and the user remains awake.
- **Regular**: At least 3x per week, highly associated with dependence. Likely to develop tolerance, and withdrawal symptoms.
Pharmacology

- ATS affects 3 neurotransmitters
  - Dopamine
  - Serotonin
  - Noradrenaline
**DOPAMINE**

- Regulates

  - Primary reward and pleasure pathway (do something $\Rightarrow$ feels good $\Rightarrow$ do it again)

  - Attention, working memory and motivational behaviour, executive function, psychomotor control

  - Released into synapse during pleasurable activities (food, sex, seeing loved ones etc.)
DOPAMINE

- Amphetamines released into CNS, mimic dopamine and fill the brain cell
- The cell then releases excessive amounts of dopamine into the synapse
- Then blocks reuptake of dopamine floating in the synapse. Effects can last 8-12 hours.
**DOPAMINE**

- It is thought that regular pleasurable activities may release around 200-250 dopamine measures into the synapse.

- One hit of methamphetamine may release up to 1,200. Some estimate up to 12,000 (difficult to accurately measure).
**SEROTONIN**

- Regulates more complex behaviours
  - Messages about mood, appetite, sleep, cognition, perception, motor activity, temp regulation, pain control, sexual behaviour and arousal, hormone secretion
  - Smooth muscle function, blood pressure regulation, blood platelets in gastrointestinal system.
NORADRENALINE

- Regulates:
  - Sympathetic Nervous System including cardiovascular function, arousal, concentration, attention, memory and learning.
Effects - Positive

- Euphoria
- Increased pleasure
- Alertness
- Confidence
- Stamina
- Increased libido
- Appetite suppression
- Feeling of self worth and confidence
Methamphetamines and Aggression

- Wide coverage in media (shock adds)

- Users often get ‘revved up’ – being a bit too intense, talking loud and fast, talking obsessively losing awareness of time in ways that inexperienced people may not understand. Misinterpreted as aggressive

- This behaviour is typically managed well within peer circles (“calm down mate, it’s all good…”).

- Becomes problematic in public or when people are using alone.
Methamphetamine and Aggression

- Incidents of ATS related violence has decreased since protocols and training for ED staff.
- Users report that true aggression and violence tend to occur to individuals who would act similarly after large amounts of alcohol.
METHAMPHETAMINES AND PSYCHOSIS

- Loss of connection with reality, including thought, emotion and behaviour

- Thought to be caused by excess dopamine communicating messages to the senses, leading to distortions
METHAMPHETAMINES AND PSYCHOSIS

Key features:

- **Hallucinations**: experiences sensations that have no basis in reality (e.g. Bugs on the skin, hearing voices). Can affect all 5 senses

- **Delusions**: Fixed beliefs which do not shift, despite evidence to the contrary. (e.g. Being followed or spied on). Not including cultural or religious specific (unless not upheld by other members of the same group)

- **Thought disorder**: Thinking becomes confused, speed up or slow down, jumping between topics with no logical connection
Methamphetamine and Psychosis

Key features:

- **Bizarre behaviour**: responding to delusions or hallucinations. These behaviours make sense at the time for the person.

- Blunted affect and loss of drive for ‘normal’ behaviours (self care)

- **Mood swings**: may be present. Mood swings without the presence of delusions or hallucinations should not be assumed as psychotic.

- **May occur at any dose level and sufferers may develop “reverse tolerance” and re-experience further psychosis at lower doses**
WITHDRAWAL

3 phases of withdrawal

- Crash (1-3 days)
- Intense (2-14 weeks)
- Long term withdrawal/recovery (18 months)
Withdrawal

Crash phase

• Recovery from exhaustion, lack of sleep and food
• Insomnia/hypersomnia
• Craving sleep and food
• Nightmares (positive, return of REM sleep)
• Irritability
WITHDRAWAL

Intense phase

- Intense cravings (difficult to assess consequence, forward plan and hope for the future)
- Day 10-14 peak for suicide
- Anxiety and depression are real
- Psychotic symptoms can re-emerge
- Difficulty remembering and planning
- Dysphoria with daily life
- Mood swings
- Psychomotor retardation (Volcow et.al., 2001)
- Chances of relapse very high
Withdrawing

- Over time
  - The receptors may get damaged or burnt out, causing them to narrow (neuroadaptation)
  - Less receptors in total, and remaining receptors being weaker means the person receives far less ‘pleasure’ signals.
  - After repeated use the brain may believe it has ‘too much’ dopamine and stop manufacturing it.
  - Threshold for what constitutes as pleasurable and ‘happy’ is now much higher than previous, making it even harder to feel happy.
Withdrawal - Dopamine

- Lack of reward or motivation, increased impulsivity (Wade et. al., 2000)
- Control of movement (impaired motor control)
- Poor memory, planning and problem solving
  - Also due to the absence of the brain’s ‘rocket fuel’
- Cognitive shifting (ability to shift focus from a fixated idea to an alternative eg. craving)
WITHDRAWAL - SEROTONIN

- Impaired focus and concentration
- Small task can feel like a chore
- Chronic fatigue
- Appetite and sleep problems
- Low libido
- Social withdrawal
- Inability to regulate mood or modify aggression
Withdrawal - Noradrenaline

- Impaired attention, focus, concentration and decision making
- Impaired arousal
- Depletion in ‘flight or fight’ response
WITHDRAWAL – METH SPECIFIC

- Needs to be treated differently because withdrawal IS different.
- After the ‘crash’ phase, the individual slowly feels worse
  - Still no motivation, feel miserable, only way to feel happy is with more ice, can’t assess consequence or plan ahead so therefore ‘I will feel this way forever’.
- Throw in trauma.....
  - This is this ONLY thing which has given me any sence of confidence within myself, it lets me feel like ME and actually like who I am...... I can’t give that up
Withdrawal

- Studies show that whilst the process can take time (estimates up to 18 months), functioning can improve (Volcow et.al., 2001)
TREATMENT

Lifestyle factors

- Routine
- Diet
- Exercise
- Fish oils
- Get people moving.....
- Experience things they have always wanted to (or stopped due to ice)
Motivational Interviewing

- Increasing our capacity for training in Motivational Interviewing to all staff including

- Our focus is on increasing clients capacity for self-efficacy and decision making during withdrawal and maintenance phase of their drug use.

- Having all staff trained in Motivational Interviewing allows us to have targeted, evidence based conversations with clients at any time day or night.
Cognitive Impairment

- Trained all clinical staff in Montreal Cognitive Assessment (MOCA).

- Brief, effective cognitive assessment tool to inform our treatment planning for all clients with empirical data on cognitive functioning.

- Well evidenced and works very well with substance users, particularly for methamphetamine users.
TRAUMA AND CRISIS

- Increased our training capacity in trauma informed practice as a best practice model.

- Especially relevant in the current climate given the amount of recent trauma our clients have suffered (violence, homelessness, selling self to dealers etc.)

- All staff trained in Therapeutic Crisis Intervention (TCI) to work with unpredictable and challenging behaviors in a supportive and holistic way.
Families

- Increased capacity to work effectively with families

- Issues with ice users in the family setting highlights our development of our Youth Homelessness Services (YHS) to work closely with PALM to support young people at risk of homelessness.

- Clinical staff have received training in brief family focused therapy to better support our clients and their families.
Thank You!!