

# Post Millennium Preference of Substance Abuse among Teenagers: Fast and Furious

Dear Editor,

World Health Organization (WHO) defines amphetamine-type stimulants (ATS) as a group of drugs that are mainly consisted of amphetamine and methamphetamine. There are few drugs under this group such as *methcathinone*, *fenetylline*, *ephedrine*, *pseudoephedrine*, *methylphenidate* and MDMA or 'ecstasy' (WHO, 2014). Recent statistics have shown an increase in the number of ATS abusers worldwide including its markets, the seizures and consumption level and its manufacturing. Based on the World Drug Report in 2013, the use of ATS, excluding 'ecstasy', remains widespread globally, and appears to be increasing in most regions. In 2011, it is estimated 0.7% of the global population aged 15-64, or 33.8 million people, had used ATS in the preceding year. Meanwhile, the prevalence of 'ecstasy' in 2011 (19.4 million, or 0.4 per cent of the population) was reported to be lower than in 2009 (UNODC, 2013).

An increasing pattern of ATS market was also reported in Asia's developed economies, notably in east and south-east Asia. For the global statistics of seizures, they have risen to a new high up to 123 tons in 2011, which is a 66% rise compared with 2010 (74 tons) and a doubling since 2005 (60 tons). Among the group of drugs involved, methamphetamine continues to be the mainstay of the ATS business when it accounted for 71% of global ATS seizures in 2011. In the east and south-east Asia, methamphetamine pills remain as a predominant ATS where 122.8 million pills were seized in 2011. There is also an indication of an increased methamphetamine manufacturing activity in central America where Europe and the United States reported to have almost the same number of amphetamine laboratories (58 versus 57) in 2011 (UNODC, 2013).

In Malaysia, recent statistics from National Drug Agency had shown 8.07% among all of the drug abusers used ATS which is the lowest when compared with the other types of drugs (NADA, 2013) as Heroin is among the primary drug of abuse in Malaysia. However, the use of ATS has grown considerably in Malaysia over the past few years. This has been shown in 2011 statistics where crystalline methamphetamine had surpassed morphine as the second most widely used drug in the country. The number of drug-related arrests involving crystalline methamphetamine in 2011 showed a 43% increase over the previous year. In addition, arrests involving methamphetamine

pills totalled 5,863 in 2011 appeared for the first time that methamphetamine pill-related arrests have been reported during the five year reporting period (2007-2011). Meanwhile, arrests related to the ecstasy had decreased by 39% in 2011 during the year. Seizures related with the ATS drug abuse also had been reported to increase in 2011. Seizures due to Methamphetamine pills were reported to increase more than tripled in 2011 with more than 360 000 pills were seized during that year, which is the highest total reported for the past five years (Global SMART Programme, 2012).

Keeping in view of their expansion of markets, ATS has been said to undergone wide changes from before particularly in their widest expansion of their market. According to UNODC Executive Director, Yury Fedotov said: "The ATS market has evolved from a cottage-type industry typified by small-scale manufacturing operations to more of a cocaine or heroin-type market with a higher level of integration and organized crime groups involved throughout the production and supply chain. We are seeing manufacturing shifting to new markets and trafficking routes diversifying into areas previously unaffected by ATS (UNODC, 2011).

Uncontrolled use of ATS can cause various significant and serious health effects. ATS is known as central nervous system stimulants that effect neurochemical mechanisms that are responsible for regulating our heart rate, body temperature, blood pressure, appetite, attention, mood and responses that are associated with alertness or alarm conditions. The acute physical effects of ATS often closely resemble the physiological and psychological effects of a 'fight-or-flight' response to a perceived threat. This includes increased heart rate and blood pressure, vasoconstriction, bronchodilation, and hyperglycaemia. As a consequence, most of people who use methamphetamine and ATS tend to experience their increased focus, increased alertness, energetics and decreased appetite (Raki, 2010).

Others also reported the immediate effects of ATS overuse including increases in talkativeness, aggressiveness, breathing rate, heart rate, and blood pressure. Instead of that, ATS can also produce visual and auditory hallucinations. It is believed that ATS route of administration by injection to be the route that associated with the most health-related ATS problems and other

social harms such as violence and crime. The actions of persons taking ATS often become compulsive, repetitive, less organized, suspicious and self-conscious. Large ATS doses can cause fever and sweating, dry mouth, headache, paleness, blurred vision, dizziness, irregular heartbeat, tremors, loss of coordination, grand mal seizures, and even collapse. Chronic ATS abuse effects include mental illness that is similar to paranoid schizophrenia, as well as malnutrition, blockage of blood vessels, increased susceptibility to illness due to poor diet, and lack of sleep. Death may occur spontaneously due to burst of blood vessels in the brain, heart failure, or high fever (Luna, 2001).

Amphetamine may be taken as pills, injected or smoked. Patients who are abusing ATS might call Emergency Medical Services (EMS) because of the experienced symptoms and ischemic chest pain as example of taking Cocaine. In pre-hospital care, the major problems would be in behavioural and psychological settings. EMS should reassure the patients by offering as calm environment as possible, maintaining verbal contacts with the patients, and not to be judgemental. As most of the ATS patients are in their hyperactive state, it is important for the EMS to avoid any restraints for the patients as it will cause an elevated body temperature and rhabdomyolysis as a consequence from their active state and severe muscle strains (Henry, 2010).

In Emergency Department care (ED), patients with acute ATS intoxication often are treated with sedation and observation. Other complication will require the emergency physicians to perform procedures to establish airway management, fluid resuscitation, or to initiate vigorous cooling measures. In patients with acute oral ingestion, gastrointestinal decontamination will be done by activated charcoal. Whole-bowel irrigation may be indicated in suspected cases of body stuffing or body packing (large quantities of drugs in wrapping for international transport or drug hiding, respectively). Foley catheter placement is useful to be employed to monitor urine output. Persisting seizures in patients with Amphetamine abuse requires titration of benzodiazepines and a calm soothing environment (Handly, 2002).

In short, the present situation of ATS warrants immediate attention, with a major epidemic of methamphetamine use ranging from United States to Asian countries. In relation to this issue, researchers have stressed an urgent need to map out this epidemic in order to assess their widespread usages and the scale of their problems including their consequences and responses.

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### REFERENCES

- Global SMART Programme U. Patterns and Trends of Amphetamine-Type Stimulants and other drugs Asia and the Pacific, United Nations Office on Drugs and Crime, 2012.
- Handly N. Emedicine, 2002. Toxicity, Amphetamine. Available at: <http://emedicine.medscape.com/article/812518-overview#a0104>. [Accessed 20 March 2014].
- Luna GC. Use and abuse of Amphetamine-Type Stimulants in the United States of America. *Revista Panamericana de Salud Pública*, 2001,9:114-122.
- Marck C, Henry ERS. In *EMT Prehospital Care* (Ed, Edgerly, D. C.), 2010, pp. 369.
- National Antidrug Agency (NADA). October drug report, Ministry of Internal Affairs (Malaysia), 2013.
- Raki M. Ministry of Health, Wellington, New Zealand, 2010.
- United Nations Office on Drugs and Crime (UNODC). 2011. *Ats: Second Most Commonly Abused Drug Type Worldwide*. [Online] Available at: <http://www.unodc.org/unodc/en/frontpage/2011/September/ats-second-most-used-drug-type-in-the-world.html>. [Accessed 20 March 2014].
- United Nations Office on Drugs and Crime (UNODC). *World Drug Report*, United Nations Office On Drugs And Crime, 2013.
- World Health Organization (WHO). 2014. Amphetamine-type stimulants. [Online] Available at: [http://www.who.int/substance\\_abuse/facts/ATS/en/](http://www.who.int/substance_abuse/facts/ATS/en/). [Accessed 20 March 2014].

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