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Socio-demographic Characteristics and Drug Abuse Patterns of Combined Amphetamine-Type Stimulants and Opioid Dependence in Malay Male Subjects in Kota Bharu, Kelantan, Malaysia

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Abstract

The objective of this study was to examine the socio-demographic characteristics and drug abuse patterns of combined amphetamine-type stimulants (ATS) and opioid dependence in Malay Male subjects in Kota Bharu, Kelantan, Malaysia. Seventy drug dependent subjects diagnosed using Diagnostic and Statistical Manual-IV (DSM-IV) who fulfilled the inclusion and exclusion criteria were interviewed using a questionnaire. The median age (IQR) of the subjects was 28.0 (7.68) years old. The mean (SD) initiation age for ATS was 27.39 (9.79) while the mean (SD) initiation age for an opioid was 22.20 (7.19). 57.1% of the subjects used injections as their method of opioid ingestion, while 65.7% preferred chase method to ingest ATS. Most of the subjects were HIV negative (61.4%) and have been arrested and convicted for drug use (88.6%). The majority have not sought any treatment regarding their drug usage (71.4%). However, the majority demonstrated no history of arrest or conviction for non-drug related crime (77.1%). This study provides an update on the socio-demographic and drug abuse patterns of combined amphetamine-type stimulants and opioid dependence subjects that may help in combating the alarming increase of drug abuse.

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abuse patterns of combined amphetamine-type stimulants and opioid dependence in Malay Male subjects in Kota Bharu, Kelantan, Malaysia.

Introduction

The health of a man is rooted in his socio-cultural and socio-environmental factors that may affect his psychophysical development and his lifestyle and behaviour. Drug addiction is a global problem where its negative impact on one's health as well as on society is increasing the day. Malaysia has also been struggling in fighting drug addiction in the country [1]. Opioids predominantly heroin and morphine together with amphetamine-type stimulants (ATS) including methamphetamine, amphetamine and ecstasy dependence are the primary drugs of abuse for most drug users in Malaysia [2].

According to The National Anti-Drug Agency of Malaysia, 142,199 people with drug dependence were reported in 2019 compared to 130,788 people in 2018, an increment of 11,416 addicts [3]. The number of recurring drug users also had increased in 2019 with 8,754 people compared to 7,793 people in the previous year.

Drug dependence is highest in Malay ethnic. This has been statistically stable since 2014 with an average percentage of 80.07% and at its highest peak of 81.81% in 2018 compared to other ethnics which is 6% for Chinese, 7% for Indians, and another 7.37% is among various minority ethnics in Malaysia [3]. Over the past decade, amphetamine-type stimulants (ATS) has emerged as a significant concern where a significant rise of ATS market is noted in the Asian region [4]. According to the United Nations, globally, over 33.9 million people are estimated to use amphetamine and other prescribed stimulants [5].

Opiods are synthetic or naturally occurring alkaloid that is derived from opium poppy plant [6]. It has a powerful analgesic effect where it activates opioid receptors in the brain which influences pain and euphoria perception.The euphoric characteristic that comes with the drug during pain management had led to its dependence [7,8]. Of all, morphine and heroine are the most abused substance in the opioid group. Opioid dependence can lead to death due to the effects of opioids on the part of the brain which regulates breathing. This is the main symptom for fatal opioid overdose [9].

ATS are manufactured synthetic drugs that can be produced anywhere with simple ingredients and basic equipment [5]. It acts as a stimulant by inducing euphoria, increasing energy level and alertness. Amphetamine can also reduce appetite, raises blood pressure, breathing and heart rate [10]. Of all, amphetamine, methamphetamine, phentermine, 3-4 methylenedioxyamphetamine (MDA), 3,4 methylenedioxymethamphetamine (MDMA), and 3,4-methylenedioxy -N-ethylamphetamine (MDEA) are the most popular drugs from the amphetamine-type stimulants (ATS) class [11]. ATS is usually taken together with opioid as it will increase the effect of ATS itself towards the dependences [12,13].

The use of two different drug groups with opposite effects at the same time is perplexing. This study aimed to examine the socio-demographic characteristics and drug

Materials and Method

A descriptive, observational study was carried in Hospital USM. The study protocol was approved by the Research and Ethics Committee of the School of Medical Sciences, Universiti Sains Malaysia [USM/JEPeM/15020063] in 2016, which complies with the Declaration of Helsinki.

The subjects (n=70) were recruited from a pool of patients coming for treatment at Hospital Universiti Sains Malaysia, Kelantan, Malaysia who fulfilled the inclusion criteria as follows: (a) Malay (third generation), (b) Male, (c) Diagnosis for both opioid and ATS dependence based on DSM-IV, (d) Active mixed drug use of at least two days per week for the past one month documented by ATS and opioid positive urine tests. All subjects voluntarily signed written consent after explaining the study procedures, objectives, benefits and risks. Information that was obtained from the subjects were kept confidential.

A semi-structured criteria based on Addiction Severity Index (ASI) criteria was used to collect the demographic and clinical data from subjects. The questionnaire contains subject's personal data including age, body weight, height and blood pressure. Apart from that, details of their drug addiction history were recorded including drug initiation age, types of drugs being abused, drug initiation age, drug usage history, drug usage pattern for the last 30 days before treatment, other substance use, quitting attempt, treatment strategies and crime history. Their HIV status was also recorded. The subject's height and weight were measured in cm and kg, respectively. The body mass index (BMI) was calculated by dividing weight (kg) by height squared (m^2). Blood pressure was measured on the subject's right arm after resting in a sitting position for 5 min by using an automated blood pressure machine. The blood pressure was taken twice at a 2 min interval.

Descriptive analysis (percentage, mean and standard deviation) was performed using the SPSS package ver. 20 (IBM, Armonk, NY).

Results

Details of the demographic data consisting of age, weight, height, blood pressure and body mass index (BMI) was shown in Table 1.

The median age for the subjects was 28.0 (7.68) years old. The minimum opioid initiation age was 13 years old, while the maximum age was 50 years old with the mean and standard deviation (SD) of 22.20 (7.19), respectively. For ATS drugs, the initiation age started as early as 12 years old, with the maximum age of 50 years old. The mean and standard deviation (SD) for ATS initiation age was 27.39 (9.79), respectively.

The majority of the subjects were tested negative on the HIV test with an approximate 61.4% (n=43). For methods of opioid ingestion, the majority used injections with 57.1% (n=40) while 40.0% (n=28) preferred chase to ingest opioids. On the other hand, ATS is ingested mainly

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by the chase method with a 65.7% (n=46) while another 24.3% (n=17) preferred injection as a method of ATS ingestion.

100% of them (n=70) used opioids while 42.9% (n=30) used ATS for more than 20 days in the past 30 days prior to seeking treatment. About 77.1% (n=54) used opioid for 1 to 5 times daily while 57.1% (n=40) used ATS for 1 to 5 times per week.

As for quitting attempts, more than half of the subjects have tried quitting drugs, 78.6% (n=55), where 34.3% (n=24) quit using drugs for 1-2 years before while another 31.4% (n=22), quit using drugs for less than a year. Most of the subjects, 71.4% (n=50) have never sought treatment regarding drug dependence.

About 88.6% (n=62) have been arrested and convicted for drug usage where 38.6% (n=27) have been arrested for drug possession crimes. Otherwise, 7.1% (n=5) have never been arrested before. The majority of the subjects have never been arrested for crimes nonrelated to the drugs with a percentage of 77.1% (n=54). In comparison, 18.6% (n=13) have been arrested and convicted before for other non-drug related crimes such as stealing, robbery, etc. Details of clinical charateristics of the subjects are summarised in Table 2.

Table 1 Socio-demographic data of subjects involved in the study

	Drug dependent group (n=70)
	Mean (SD)
Age (years)	28.0 (7.68)
Height (m)	1.68 (0.63)
Weight (kg)	70.04 (11.30)
Body mass index (kg/m²)	25.30 (3.72)
Brachial systolic blood pressure (mm/Hg)	126.23 (17.63)
Brachial diastolic blood pressure (mm/Hg)	75.40 (8.89)

Table 2 Clinical characteristics of combined opioid and ATS drug-dependent subjects

		Minimum	Maximum	Mean	SD
Drug addition initiati	Opioid	13	50	22.20	7.190
	ATS	12	50	27.39	9.791

	Drug dependent group (n=70)	(%)
Opioid initiation age (years) 11-20	36	51.6
21-30	28	39.9
31-40	4	5.6
41-50	2	2.8
ATS initiation age (years) 11-20	22	31.3
21-30	26	37.1
31-40	16	22.9
41-50	6	8.4
HIV status		
Positive	8	61.4
Negative	43	11.4
Never tested	15	21.4
Unsure result	1	1.4
Methods of ingestion **Opioid**		
Injection	40	57.1
Chase	28	40.0
Both	2	2.9
ATS		
Injection	17	24.3
Chase	46	65.7
Both	7	10.0

Pattern of drug use		
Number of days using opioid past 30 days prior to seeking treatment	70	100.0
>20 days		
Frequency of daily opioid use	54	77.1
1-5 times	16	22.9
>5 times		
Number of days using ATS past 30 days prior to seeking treatment	18	25.7
<5 days	4	5.7
5-10	18	25.7
10-15 days	30	42.9
>20 days		
Frequency of daily ATS use	40	57.1
1-5 times	12	17.1
6-10 times	14	25.7
21-25 times		
Number of quitting attempts	55	78.6
Have tried quitting	14	20.0
Never quit	1	1.4
No data		
History of past treatment	18	25.7
Have tried seeking treatment	50	71.4
Have never sought treatment		
No data		

History of drug use arrest arrest and conviction		
Yes	62	88.6
No	5	7.1
No data	3	4.3
History other crime arrest and conviction		
Yes	54	77.1
No	13	18.6
No data	3	4.3

Discussion

The present study reported socio-demographic characteristics and drug abuse patterns of combined amphetamine-type stimulants and opioid dependence in Malay male subjects in Kota Bharu, Kelantan, Malaysia. The average age of the subjects studied was 28 years old. The mean BMI for the subjects was 24.66, which falls slightly under the underweight category. Their low weight might be due to the use of ATS among the subjects. Amphetamine was widely prescribed to treat obesity and depression in the 1960s in the United States due to its effect that leads to increased activity and decreased appetite via central nervous system (CNS) activation [14].

The present study also reported high blood pressure among the subjects. The reasons may be due to the use of drugs which causes the imbalance of catecholamines in the body leading to a change in blood pressure and increased risk of cardiovascular risk among drug users [15]. This study is confined to Malay subjects because Malay is the largest ethnic in Malaysia with most drug users being Malay [3]. Thus, the selection was based on three generations of Malay ethnicity where his father, mother, grandfather and grandmother must be of Malay origin.

Furthermore, despite the increasing pattern of drug use among women in recent years by NADA (2019), men are still the major contributor of drug dependence in Malaysia[3]. This is similar to a previous study by Mohamed et al., (2008), who reported significant association between drug dependent and male gender, where female respondents showed a lower tendency for drug misuse (M=1.14, SD=2.96) [16].

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The minimum drug initiation age of both opioid and ATS ranged from 12-13 years. NADA reported teenagers under 18 represented 2.68% of those arrested and charged as drug dependents in 2017 [3]. The possible reason for this is due to the availability of drug among students at school where methamphetamine pills or "pill kuda" were readily sold to students at a low price. Another possible reason is due to the locality of Kelantan, which is located next to Thailand, which is one of the largest ATS and another synthetic drug producers in the world [5]. Our results show that approximately 61.4% (n=43) of the subjects were HIV negative while only 11.4% (n=8) are HIV positive. This finding is contradictory to most studies that linked drug usage with being HIV positive [17].

More than half of the subjects preferred injections as their method of administrating opioids [57.1% (n=40)]. This finding is in tandem with Desrosiers *et al.* [12] where most participants chose to inject opioids because a small dose produces the desired effect at a faster rate. However, our result for preferred ATS administration contradicts with Desrosiers *et al.*[12] where our subjects preferred to use chase method (chasing the dragon) [65.7% (n=46)]. This method is done by inhaling the vapour from a heated solution of ATS and opioid [18]. The majority of the subjects have never sought treatment due to drug usage [71.4% (n=50)]. Approximately 18.6% (n=13) of the subjects have been convicted for committing other crimes such as stealing and robbery. This finding was further supported by Bennett *et al.*[19] where they found that people who have used drugs were 2.8-3.8 times more likely to commit crimes.

Conclusion

This study updates the socio-demographic characteristics and drug abuse patterns of a combined of ATS and opioid dependent subjects in Kota Bharu, Kelantan, Malaysia that may help combat the alarming increase of drug usage.

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