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Sexual Behaviour among Male Methamphetamine and Heroin Dependents in Selected Areas in Malaysia

(Tingkah- laku Seksual dalam Kalangan Lelaki Ketagihan Metamfetamin dan Heroin di Beberapa Tempat di Malaysia)

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ABSTRACT

This study aims to describe the pattern of sexual behaviour among methamphetamine and heroin users. It describes the pattern of sexual behaviour based on aspects of sex such as desire, interest, drive and obsession in relation to the drug use. A cross-sectional study was carried out among attendees of drug rehabilitation programmes in Kota Kinabalu, Kota Bharu and Kuala Lumpur. All subjects were living in the community with satisfactory psychosocial functioning. This study was primarily based on a validated sexual behaviour self-rated questionnaire followed by face-to-face interview. A total of 227 subjects were included with 124 (54.6%) using methamphetamine while 103 (45.4%) using heroin. Majority (218; 96%) were heterosexuals with 104 (45.8%) reported having been involved in high risk sexual behaviour. More methamphetamine than heroin subjects agreed that their sexual thoughts, feelings and behaviours were often associated with the drug (p<0.05). Methamphetamine subjects agreed that the use of methamphetamine caused them to be more obsessed with sex and they found themselves to be preoccupied with sexual thoughts while being under the influence of the drug (p<0.05). Heroin subjects mainly reported on negative effects of the drug on their sexual behaviour. Methamphetamine subjects reported that the use of drug had positively affected their sexual interest and drive (p<0.05). Methamphetamine subjects were also 1.97 times more likely than heroin subjects to be involved in risky sexual behaviour. The results of this study can be utilized to improve the drug treatment and rehabilitation programme. Methamphetamine subjects were more likely than heroin subjects to be involved in risky sexual behaviour.

Keywords: Heroin; Malaysian community; methamphetamine; sexual behaviour

ABSTRAK

Kajian ini adalah bertujuan untuk menghuraikan pola tingkah laku seksual dalam kalangan pesakit lelaki yang mengalami ketagihan metamfetamin dan heroin. Kajian menghuraikan aspek pola tingkah laku seksual berdasarkan kehendak seks dan obsesi dalam konteks penyalahgunaan dadah. Kajian hirisan lintang ini dijalankan dalam kalangan peserta program rehabilitasi dadah di Kota Kinabalu, Kota Bharu dan Kuala Lumpur. Semua subjek kajian tinggal dalam masyarakat dengan fungsi psikososial yang baik. Kajian ini adalah berdasarkan kepada keputusan soal selidik kelakuan seks nilai sendiri dan diikuti dengan sesi temu bual. Seramai 227 subjek telah mengambil bahagian dengan seramai 124 (54.6%) orang menyalahgunakan metamfetamin sementara 103 (45.4%) menyalahgunakan heroin. Majoriti daripada subjek (218; 96%) merupakan golongan heteroseksual dengan seramai 104 (45.8%) orang melaporkan yang mereka terlibat dalam aktiviti seksual yang berisiko tinggi. Lebih ramai subjek yang mengambil dadah metamfetamin berbanding heroin melaporkan bahawa pemikiran, perasaan dan tingkah laku seks mereka dipengaruhi oleh dadah (p<0.05). Subjek yang menyalahgunakan metamfetamin melaporkan bahawa mereka lebih obses tentang seks dan mendapati pemikiran mereka lebih cenderung memikirkan ke arah seks (p<0.05). Subjek yang menyalahgunakan heroin pula melaporkan kesan negatif dadah terhadap tingkah laku seksual. Subjek metamfetamin melaporkan penyalahgunaan dadah memberi kesan positif terhadap keinginan dan kemahuan seks mereka (p<0.05). Mereka yang menyalahgunakan metamfetamin berisiko sebanyak 1.97 kali berbanding penagih heroin untuk terlibat dalam aktiviti seks yang berisiko tinggi. Hasil keputusan kajian amat penting untuk digunakan sebagai usaha untuk perawatan pesakit yang menagih dadah dan dalam program rehabilitasi. Subjek yang menyalahgunakan metamfetamin terdedah kepada aktiviti seks yang berisiko tinggi.

Kata kunci: Heroin; komuniti Malaysia; metamfetamin; tingkah laku seksual

INTRODUCTION

Illicit use of methamphetamine is the latest wave of drug problem in Asian countries including Malaysia (United Nations Office on Drugs and Crime 2004). The Malaysian National Drug Information System (BioNADI) reported that the stimulant most used in Malaysia are 3,4-methylenedioxy- N-methylamphetamine (MDMA), methamphetamine and amphetamine with

methamphetamine the most popular choice (Mohd Rohani et al. 2009; National Anti Drug Agency 2010). The problem of heroin and morphine addiction in Malaysia is a continuation of opium problem from pre-independent Malaya (Navaratnam 1988).

It is a long-debated issue whether sex causes drug use or vice versa. Drugs were believed to enhance the act of having sex, while at the same time sexual acts were believed to increase the effects of drugs (Rhodes 1996). Use of substances just before or during sex can alter sexual practices in many ways. Stimulants are popularly believed to produce aphrodisiac effects and influence sexual experience by increasing excitement. Methamphetamine is an excellent option in this matter because of its pharmacological properties (Navaratnam 1988; United Nations Office on Drugs and Crime 2004). At lower doses, the effects of amphetamines or methamphetamines have been found to increase libido or modify the process of orgasm (Buffum 1982). Users of methamphetamine usually engaged in sexual activity while using crystal methamphetamine (Degenhardt & Topp 2003).

The motivations for methamphetamine use by heterosexual men were to get high, to get more energy and to party (Semple et al. 2004). The desire to enhance sexual pleasure was a motivation to begin and to continue using methamphetamine (Cheng et al. 2009). Brown and colleagues found that methamphetamine users were significantly more likely to endorse items related to obsession with sex, a likelihood of having sex while using and expressed concern that sex will be boring without it (Brown et al. 2005). Methamphetamine was also associated with risky sexual behaviours, especially unprotected anal sex and sex with new partners (Zule et al. 2007) .

Men who have sex with men (MSM) used methamphetamine to increase libido, improved performance and increased sexual sensation and pleasure (Bousman 2009; Semple et al. 2009). Methamphetamine created 'instant bottoms' among male homosexuals or bisexuals (Frosch et al. 1996). MSM-methamphetamine users who were HIV-positive were more likely to engage in intoxicated sexual acts (Bousman 2009).

RATIONAL AND OBJECTIVES

Intimate and private topics such as sex and drugs are not openly discussed in a conservative society like Malaysia thus capping the amount of data available. Therefore, this study was aimed to provide more information on the sexual behaviour among users of the two most commonly used drugs. The data and knowledge obtained could be used for future preventive methods and treatment modalities in the area of addictions and sexually-transmitted diseases. Unlike previous studies, this study will describe the pattern and characteristics of sexual behaviour that includes influence of methamphetamine and heroin on sexual thoughts, feelings, desire, sexual performance, enjoyment, obsession, risky sexual behaviours while describing the entanglement and motives of drug use and sex.

METHODS

This study was carried out among the attendees of two drug rehabilitation programmes, each one operated by the Malaysian National Anti Drug Agency (NADA) and Universiti Malaya Centre of Addiction Sciences (UMCAS). NADA operated the programmes in Kota Kinabalu, Sabah and Kota Bharu, Kelantan while UMCAS operated the programme in Kuala Lumpur. The study locations are major cities and have the highest number of methamphetamine and heroin clients undergoing community-based surveillance and rehabilitation programme (Mahmood et al. 2009).

Convenience sampling was used. Every outpatient subject that came for scheduled monthly reporting and rehabilitation programme including follow-up appointment was approached. The subjects have documented evidence of using methamphetamine or heroin as the primary drug of use within the last six months through positive urine for drugs test or through self-report. They should not be either intoxicated, having withdrawal or psychiatrically-ill at the time of data collection. The authors facilitate referral to the psychiatric services for subjects who were suspected of having psychiatric illness or have discontinued their psychiatric follow-up. The subjects were sexually active, able to understand, communicate, read and write in either Malay or English. Only male subjects were included because of the difficulty in collecting adequate amount of female drug users. All subjects were assured regarding the confidentiality of the responses and ensured that their responses will not affect either the on-going legal surveillance process or the treatment and rehabilitation programmes. All the answered questionnaires were placed and sealed in a separate, unmarked envelope.

Information collected included: socio demographic data; dependency criteria (assessed using Section K ('Non-alcohol Substance Use Disorder) of MINI International Neuropsychiatric Interview, which is a short structured diagnostic interview), and sexual behaviour data. Sexual behaviour data was collected using the self-rated Malay version of substance use and sexual behaviour survey (SUSBS) questionnaire. It was a 25 questions self-report questionnaire first used by Rawson et al. (2002). The questionnaire was translated and validated into the Malay version by two of the authors of this study with the permission from the original author. The Malay version of SUSBS has high internal consistency (Cronbach alpha = 0.887). Data collection was done for 3-month from October to December 2011. This study was approved by the Medical Research Ethics Committee, Faculty of Medicine, Universiti Malaya and Director General of National Anti Drug Agency. The targeted sample size was 138 based on the prevalence of 10%. The level of confidence was set at 95%, Z value at 1.96 and d value was set as 5%.

The data was coded accordingly and keyed into the Statistical Package for Social Sciences (SPSS) version 15. The socio demographic and clinical data was analyzed using descriptive statistics. The answers of SUSBS questionnaire were re-coded into 'Yes' and 'No'. The

relationships of the 25 questions with the primary drug of use were first analyzed using Chi-square test.

Later, a univariate analysis using Chi-square was done to produce the crude odds ratio (OR) for each of the questions. The data were then adjusted for age, marital status, highest education level and ethnicity. Following that, a multivariate analysis using logistic regression was applied to produce adjusted odds ratio. Additionally, the score of the questionnaire was shown by the difference of means using Mann-Whittney test. As a sub-analysis, questions 31, 32, 33 and 34 of the questionnaire, which were designed to evaluate risky sexual behaviours were then computed together to produce the odds ratio for risky sexual behaviour.

RESULTS

SOCIO DEMOGRAPHIC DATA

A total of 241 subjects were approached to participate. Out of this, only 227 were included into the study proper. 14 subjects were excluded (1 psychotic, 7 did not want to give written consent, 6 incomplete responses). This gave the response rate of 94.2%. Kuala Lumpur has the highest number of participants (103; 45.4%), followed by Kota Kinabalu (78; 34.4%) and Kota Bharu (46; 20.3%). All the participants from Kuala Lumpur used opiate (heroin) while all participants from Kota Kinabalu and Kota Bharu used crystal methamphetamine (syabu). Majority of participants (165; 72.7%) were dependents. Table 1 shows the socio demographic data of the subjects.

DRUG USE

There were 124 (54.6%) methamphetamine subjects compared with 103 (45.4%) heroin subjects. The mean years of drug use was 8.2 ± 7.7 years. The participants used drug 4 days per week (mean 4.3 ± 3.3 days). The participants spent around RM70 (mean RM72.71 ± RM66.48; range RM2 - RM500) on the days they used drugs. Overall, participants preferred smoking/chasing (202; 89%) followed by injection (26; 11.5%).

The duration of drug use for methamphetamine was 3.84 ± 3.71 years while for heroin it was 13.41 ± 8.15 years. Methamphetamine subjects used the drug for about 2.75 ± 2.15 days per week while heroin subjects used the drug almost every day with a mean of 6.34 ± 3.41 days per week. Methamphetamine subjects spent more money on drugs (mean = RM73.99 ± RM82.55) compared with heroin subjects who spent slightly lesser (mean = RM71.17 ± RM39.66). Table 2 shows drug-using behaviour among methamphetamine and heroin subjects.

SEXUAL BEHAVIOUR

Majority (218; 96%) of the participants were heterosexuals followed by bisexuals (3; 1.3%) and homosexuals (3; 1.3%). The participants have the mean of 1.7 ± 3 sexual partners in the last 6 months. Only 18 (7.9%) subjects have high frequency in risky sexual behaviours. Participants who used methamphetamine has more number of sexual partners (mean 1.97 ± 3.09) compared with participants who used heroin (1.41 ± 2.88). Relatively the same proportion of methamphetamine and heroin subjects were involved in risky sex based on the use of protective methods when engaging multiple sexual partners. None of methamphetamine subject was positive with HIV. Only small numbers of methamphetamine and heroin subjects experienced sexual abuse, raped or molested. There were 15 (12.1%) methamphetamine subjects who admitted that they had sexual obsession prior to having drug problems but only 9 (7.3%) admitted that the sexual obsession was a bigger problem. Table 3 shows the responses of questions regarding sexual behaviours which were statistically significant.

Univariate analysis was applied to all the answers from methamphetamine users. It showed that only five answers produced statistically significant results. These included the disagreement of methamphetamine subjects that their sexual thoughts, feelings and behaviours were associated with the use of the drug; the disagreement that methamphetamine use will reduce their sexual drive and disagreement that methamphetamine use will impair their sexual performance. More methamphetamine subjects answered agreed that methamphetamine use will cause them to be sexually obsessed. Table 4 shows the results for univariate analysis.

After all the answers were adjusted for age, marital status, education level and ethnicity, it appears that only 1 item was statistically significant. It was found that more methamphetamine users disagreed that the use of the drug has reduced their interest in sex and made their sex drive abnormally low (Adjusted OR = 1.05; p value = 0.042; 95% CI = 1.002 – 1.101). Mann-Whitney test was applied to see the difference of means score for the 25 questions. However, there were only 5 questions that show statistical significant difference between methamphetamine and heroin (Table 5). These questions were regarding lowered sexual desire, impaired sexual performance, lowered sexual enjoyment, lowered sexual obsession, worries that sexual activity will become dull and not interesting without the use of the drug and having sexual thoughts and romantic daydreams when under drug influence. Heroin users have higher mean rank for all of these questions except about having sexual thoughts and romantic daydreams when under drug influence.

Multivariate linear regression analysis was applied to all the score of 25 questions answered by methamphetamine and heroin subjects. It showed that all the p value for adjusted mean difference for majority of the questions were statistically significant ($p<0.05$) except for question regarding likeliness to have sex with persons other than their own spouse or primary sexual partner when under the influence of the respective drug, question regarding likeliness to practice risky sexual sex when being under the influence of the drug and the question assessing sexual

TABLE 1. Socio-demographic data

Independent variables	*n* (%)		
	Overall (*n*=227)	Methamphetamine (*n*=124)	Heroin (*n*=103)
Age (years) mean ± s.d.	33.12 ± 8.98	29.61 ± 7.19	38.08 ± 8.42
Age group			
11 – 20	12 (5.3)	12 (9.7)	-
21 – 30	91 (40.1)	68 (54.8)	23 (22.3)
31 – 40	78 (34.4)	31 (25.0)	47 (45.6)
41 – 50	31 (13.7)	13 (10.5)	18 (17.5)
51 – 60	15 (6.6)	-	15 (14.6)
Ethnicity			
Malay	158 (69.6)	60 (44.4)	98 (95.1)
Chinese	10 (4.4)	8 (6.5)	2 (1.9)
Indian	2 (0.9)	0 (0)	2 (1.9)
Kadazan-Dusun	26 (11.5)	26 (21.0)	1 (1.0)
Bajau	16 (7.0)	16 (12.9)	-
Others	15 (6.6)	14 (6.2)	-
Marital status			
Single	123 (54.2)	71 (57.3)	52 (50.5)
Married	83 (36.6)	40 (32.3)	43 (41.7)
Separated/divorced	18 (7.9)	13 (10.5)	5 (4.9)
Widowed	3 (1.3)	0 (0)	3 (2.9)
Living arrangement			
Alone	22 (9.7)	10 (8.1)	12 (11.7)
With partner/spouse	78 (26.9)	39 (31.5)	39 (37.9)
With friends	7 (13.2)	4 (3.2)	3 (2.9)
With own family	120 (52.9)	71 (57.3)	49 (47.6)
Total years of education	10.46 ± 2.32	10.32 ± 2.42	10.62 ± 2.34
Education level			
Primary	16 (0.7)	12 (9.7)	4 (3.9)
Lower secondary	61 (26.9)	32 (25.8)	29 (28.2)
Higher secondary	120 (52.9)	64 (51.6)	56 (54.4)
College/University	30 (13.2)	16 (12.9)	14 (13.6)
Employment			
Full time	173 (76.2)	92 (74.2)	81 (78.6)
Part time	18 (7.9)	10 (8.1)	8 (7.8)
Unemployed	36 (16.2)	22 (17.7)	14 (13.6)
Type of employment			
None	37 (16.2)	23 (18.5)	14 (13.6)
Labour/manual	44 (19.4)	27 (21.8)	17 (16.5)
Semi-skilled	21 (9.3)	13 (10.5)	8 (7.8)
Skilled	2 (0.9)	2 (1.6)	- (-)
Business	21 (9.3)	12 (9.7)	9 (8.7)
Own employment	8 (3.8)	2 (1.6)	6 (5.8)
Services	94 (19.4)	45 (36.3)	49 (47.6)
Level of monthly income			
RM 0 – RM 500	46 (20.3)	27 (21.8)	19 (18.4)
RM 501 – RM 1000	73 (32.2)	50 (40.3)	23 (22.3)
RM 1001 – RM 1500	82 (36.1)	37 (29.8)	45 (43.7)
RM 1501 – RM 2000	8 (3.5)	3 (2.4)	5 (4.9)
RM 2001 – RM 2500	13 (5.7)	7 (5.6)	6 (5.8)
> RM 2501	5 (2.2)	-	5 (4.9)

TABLE 2. Drug-using behaviour for methamphetamine and heroin subjects

	n (%) Methamphetamine (*n*=124)	*n* (%) Heroin (*n*=103)
Methods of administration		
Swallowing/Oral	6 (4.7)	0
Inhalation/Nose	3 (2.4)	0
Smoking/Chasing	116 (91.3)	86 (78.2)
Injection	2 (1.6)	24 (21.8)
Motives of use		
Own curiosity	10 (8.1)	52 (50.5)
Social	74 (59.7)	46 (44.7)
Work	29 (23.4)	1 (1.0)
Psychological distress	11 (8.9)	4 (3.9)
Co-morbid drugs		
Alcohol	64 (51.6)	15 (14.6)
ATS	-	28 (27.2)
Cocaine	1 (0.8)	8 (7.8)
Cannabis	19 (15.3)	23 (22.3)
Opiate	8 (6.5)	-
Others	4 (3.2)	0 (0)

TABLE 3. Responses of subjects towards questions in SUSBS

Questions	Agree (Yes)		Disagree (No)		Neutral	Chi sq df=1	P value
	Meth	Heroin	Meth	Heroin			
My sexual thoughts, feelings, and behaviors are often associated with my primary substance of abuse.	40 (40.4%)	16 (22.6%)	59 (59.6%)	54 (77.1%)	58 (25.6%)	5.698	0.017
My sexual drive is decreased by the use of my primary substance of abuse	19 (20.1%)	31 (43.7%)	75 (79.8%)	40 (53.6%)	62 (27.3%)	10.53	0.001
My sexual performance is impaired by the use of my primary substance of abuse	26 (26.8%)	35 (41.2%)	71 (73.2%)	50 (58.8%)	45 (19.8%)	4.20	0.04
The use of my primary substance of abuse has made me become obsessed with sex and/or made my sex drive abnormally high	55 (53.9%)	26 (32.5%)	47 (46.1%)	54 (67.5%)	45 (19.8%)	8.330	0.004
The use of my primary substance of abuse has reduced my interest in sex and/or made my sex drive abnormally low	24 (25%)	37 (45.7%)	72 (75%)	44 (54.3%)	50 (22%)	8.318	0.004
I often find myself preoccupied with sexual thoughts or romantic daydreams while under the influence of my primary substance of abuse	49 (45.8%)	25 (28.7%)	58 (54.2%)	62 (71.3%)	33 (14.4%)	5.918	0.015

TABLE 4. Univariate analysis of association between items in SUSBS with methamphetamine subjects

Questions	Methamphetamine *n* (%)		Crude OR	P Value	95% CI	Chi square
	Yes	No				
My sexual thoughts, feelings, and behaviors are often associated with my primary substance of abuse	40 (40.4%)	59 (59.6%)	2.29	0.017	1.15 – 4.56	5.70
My **sexual drive** is **decreased** by the use of my primary substance of abuse	19 (20.1%)	75 (79.8%)	0.33	0.001	0.16 – 0.65	10.5
My **sexual performance** is **impaired** by the use of my primary substance of abuse	26 (26.8%)	71 (73.2%)	0.52	0.04	0.28 – 0.98	4.20
The use of my primary substance of abuse has made me become obsessed with sex and/or made my sex drive **abnormally high**	55 (53.9%)	47 (46.1%)	2.43	0.004	1.32 – 4.47	8.33
The use of my primary substance of abuse has reduced my interest in sex and/or made my sex drive **abnormally low**	24 (25.0%)	72 (75%)	0.40	0.004	0.21 - 0.75	8.31

TABLE 5. Difference of means score of statistically significant questions using Mann-Whitney test for methamphetamine and heroin subjects

Questions	Mean Rank		Z	P value
	Meth	Heroin		
My **sexual drive** is **decreased** by the use of my primary substance of abuse	2.38 (0.968)	2.90 (0.975)	-3.866	0.000
My **sexual performance** is **impaired** by the use of my primary substance of abuse	2.48 (1.070)	2.84 (1.091)	-2.436	0.015
My **sexual pleasure** is **reduced** by the use of my primary substance of abuse	2.45 (1.039)	2.74 (1.000)	-2.060	0.039
The use of my primary substance of abuse has reduced my interest in sex and/or made my sex drive **abnormally low**	2.49 (1.063)	2.90 (1.107)	-2.814	0.005
I am concerned that sex will not be (or has not been) as interesting or pleasurable or even may be boring without my primary substance of abuse	2.31 (1.184)	2.64 (1.047)	-2.689	0.007

orientation due to sexual acts that were practiced when being under the influence of the drug. Methamphetamine subjects were 1.975 more likely than heroin subjects to be involved in risky sexual behaviour (OR=1.975; Adjusted OR=1.309; Chi square=6.088; *p*=1.147; 95%; CI=3.402).

DISCUSSION

The current study enquired about the influence of the drugs on specific sexual aspects. Previous studies done in Western countries only focused on risky sexual behaviour in a particular population of methamphetamine-using subjects. Only small numbers of studies exploring sexual behaviours were done in Asian countries, especially South-East Asian countries where the cultural and social variables are different. Studies of sexual behaviours were rare particularly in Muslim-dominated countries such as Malaysia and Indonesia.

The present study was mostly represented by heterosexuals. This was a common picture of a sexually-conservative Malaysian society where lesbians, bisexuals, gays and transsexuals (LGBT) were unacceptable. The fact that participants of this study have more than one sexual partner particularly methamphetamine subjects, suggested that the participants could be engaging in sex with several partners. Methamphetamine use is well associated with having multiple sexual partners (Wohl et al. 2008). The drugs' influence on sexual thoughts, feelings and behaviours were more commonly reported by those using methamphetamine compared with heroin. This was in line with previous report about motives and degrees of association between positive connection of methamphetamine and sex (Semple et al. 2009). However, a clear direction of methamphetamine influence on sexual behaviour cannot be clearly ascertained in this study because other questions regarding sexual drive, performance and pleasure were not statistically significant except questions regarding the drug decreasing and impairing sexual drive and performance. This could be because the drug of study was used for work and social reasons unlike the use of alcohol, methamphetamine, 'ecstasy' and cocaine for sexual purposes in Western countries (Bellis et al. 2008; Ibanez et al. 2005). It was rather interesting to note that none of either methamphetamine or heroin subjects agreed that their sexual drive was increased with the use of the drug. This contradicted the notion that drugs facilitated sexual activities. The only similarity between the present study and a study using the same instrument was that methamphetamine can influence sexual thoughts, feelings and behaviours (Rawson et al. 2002).

We did not establish the strong positive associations between methamphetamine and sex as reported by Brown et al. (2005). Nonetheless, our findings echoed the report by Kopetz et al. (2010) about stimulants causing reduction in sexual desire and performance whereby its use was only because of social context such as having the opportunity for sex. Being under the influence of methamphetamine caused abnormally high sexual obsession, interest and drive and the use of methamphetamine among MSM and MSMW made sexual behaviour more compulsive causing difficulties in controlling methamphetamine use and their sexual behaviour (Brown et al. 2005; Exner et al. 1992; Shoptaw et al. 2002). The same finding from this current study could suggest problems of methamphetamine users in controlling their drug-using behaviour and also making them vulnerable in contracting sexually-transmitted diseases. This vulnerability could be due to impaired decision-making capability when being intoxicated with the drug. Impulsivity and lack of control while taking methamphetamine has been postulated to cause the users to engage in higher number of sexual partners while increasing chances of unprotected vaginal and anal intercourse (Semple et al. 2005).

The lack of studies on sexual behaviour among opiate (heroin and morphine) users could be suggested by the finding that motive of heroin use was mainly due to own curiosity and for social reason and it was quite unlikely to be used for sexual activity. The dependency on heroin

has negatively affect sexual behaviour of heroin subjects in this present study. Long-term and large dose of opiate use impairs the neuroendocrine system and leads to the inhibition of gonadotrophin-releasing hormones causing reduction in testosterone among men and a reduction in sexual drive and desire (Jaffe et al. 1997). Heroin users were also known to misuse other substances and the dangerous mixture with adulterants and the different level of impurities could lead to reduction in sexual drive through impairment of neuroendocrine system.

Social desirability factor could explain widespread claims of never to be involved in risky sexual behaviour. Participants could be reluctant to admit sexual acts with different partners and the use of protection during intercourse due to feelings of guilt to their regular partner. They just wanted to be considered 'normal'. Policy makers of drug treatment and rehabilitation programme should incorporate elements of safer sex education and skills in the future programmes because quite a percentage of participants were involved in risky sexual behaviour. This is more important in the rehabilitation of methamphetamine subjects because of the higher likeliness to be involved in risky sexual behaviours. Future local studies should examine risky sexual behaviour in a more detail and objective measurement because definition of risky sexual behaviours varies. It can be the age of sexual debut, number of sexual partners, type of sexual partners, type of sexual acts or the use of sexual barriers and protection during intercourse. This present study had grouped together high risk sexual behaviours namely having intercourse, performing oral sex and masturbation, having sex with someone other than regular partner, not using protection and participation in unusual sexual acts such as sexual marathons, peeping show and voyeurism.

The most prominent methodological argument in this study was the use of convenience sampling. The choice of a more complex sampling method may hinder collection of large amount of participants in a short time frame. The recruitment method was incomparable with those done in Western countries because those participants were usually part of health and medical intervention programmes.

Conclusion

In conclusion, future drug treatment and rehabilitation programme in Malaysia, particularly for methamphetamine, should include topics of sexual behaviour because of the influence of methamphetamine on several aspects of sex. It is suggested that these future programmes could emphasize safer sexual practices due to the increased likelihood of participation in risky sexual behaviour in this group.

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