# A behavioural study on intravenous drug use and HIV/AIDS knowledge in Malaysia

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Abstract

A profile of risky behaviour patrerns (injecting behaviour and sexual behaviour) among intravenous drug users with reference to HIV/AIDS has been established. Bandura's social learning rheory (1976) and Fishbein & Ajzen (1975) social psychological model formed the basis for this study. Knowledge, attitude and belief were used as predictors to determine the significance of individual factors in influencing addicts to practise risky behaviour. The results indicate that subjects had good knowledge of and a positive attitude towards HIV/AIDS. Cultural factors had some bearing on their belief. Economic, peer and government policy were three variables tested to determine the significance of external factors in influencing addicts to practise risky behaviour. All three variables showed positive relationship ro the practice of risky behaviour among addicts thus confirming the significance of external factors. Results also show that in spite of having a sound understanding of the epidemic, subjects still maintained a risky lifestyle. External and situational factors exert greater influence on an addict to continue with risky behaviour vis-à-vis HIV/AIDS.

Key Words: behaviour patterns; HIV/AIDS; intravenous drug use

## Introduction

The proportion of HIV/AIDS cases attributable to injecting drug use (IDU) is growing rapidly in Malaysia. HIV infection rates in IDU population have grown from 0.1% in 1988 to 20% in 1994 (XI international conference on AIDS, 1996). In 1995, 77.15% of HIV cases were from the intravenous drug user/using (IVDU) population and a similar rate (76.42%) was reported up to February 1998 in Malaysia (Ministry of Health Malaysia, 1998). Therefore it is crucial ro understand the inter-relationship of IVDU and HIV/AIDS infections. Identifying the patterns and factors that contribute to the practice of risky behaviour is important for a better understanding of the epidemic.

The objectives of the study were:

a) To establish a sociodemographic profile on the background of the IVDU.
b) To identify risky injecting practices among IVDUs.
c) To identify risky sexual behaviour practices among IVDUs.
d) To determine the extent of individual factors in influencing risky behaviour practice, e.g. knowledge, attitude and belief.
e) To determine the extent of external factors in influencing the practice of risky behaviour, e.g. economic, peer, and government policy factors.

Three hypotheses were advanced to determine the significance of external factors in influencing the IVDU to practise risky behaviour:

a) The more impure the drug the more likely an addict will start to inject.
b) The stronger the influence of peers on the addict the more likely the addict will start injecting.
c) The more likely an addict is caught with injecting paraphernalia by enforcement authorities the more likely the addict will start sharing injecting paraphernalia.

## Theoretical Framework

The theoretical framework of this study is based on two social psychological models. Bandura's Social Learning Theory is based on the premise that behaviour is a learned predisposition. Injecting behaviour is learned from observations. Besides that, external consequences exert the greatest influence on behaviour when they are compatible with those that are self-produced (Bandura, 1976). Three variables (economic, peer and government policy) were tested to determine the significance of external factors in altering behaviour patterns among IVDUs with regard to HIV/AIDS.

To determine individual factors that influence behaviour, the knowledge, attirude and belief of IVDUs were measured. Knowledge is defined as something that is learned formally; cognitive understanding of a fact; commonly accepted research and clinical findings. Attitude is a learned predisposition to respond in a consistently favourable or unfavourable manner with respect to a given objecr and belief, which represents the information the person has about the object. An attitude is influenced by the degree of awareness or knowledge about the object of the attirude (Fishbein & Ajzen, 1975). This cognitive model suggests that beliefs are the primary determinants of attitudes. Knowledge, attitude and belief cannot be directly observed or measured and have to be inferred from other observable events, including self-reporting. The survey instrument used for the study included statements testing self reported knowledge of the subjects. These three variables

were used to determine the extent of individual factors in influencing risky injecting behaviour.

## Methodology

Prior to this study a pilot study was done to determine the reliability of the variables. Alpha-cronbach analysis ($P<0.70$) was done to determine the reliability of questions using 'likert' scales.

Open-ended interviews were also carried out to determine the variables that needed to be included in the instrument. The pilot study was performed on 20 subjects in all the locations of the present study.

Based on the pilot study, a structured questionnaire was developed. The questionnaire consisted of open and close ended questions.

This study was conducted in two states, Selangor and Penang. A cross sectional survey was carried out in three institutional settings and two street settings. The institutional settings were the Kajang Prison in Selangor and the Drug Rehabilitation Centres in Bukit Mertajam and Tasek Gelugor, Penang. The street samples were from the streets of Chow Kit in Selangor and Penang Road in Penang.

The sample size was 400 cases. Ninety percent of the cases were from institutions. This imbalance in sample size was due to the time and cost factor, which did not allow a bigger representation in the street samples.

The selection technique used in the institutional setting was to recruit the population of HIV positive IVDU in the particular institution at the time the study was conducted. The status of the subjects was obtained from institution records as no test was done to determine their status. Therefore, these figures represent the actual number of HIV cases in the particular institution at the time of study. The street samples were selected randomly. The main criterion in the selection is that the subject must be an IVDU. As no test was carried out to determine the subject's status they were all considered positive based on their risky behaviour practice.

To test the hypothesis, chi-square analysis with a significance level of $P<0.05$ was carried out. All three hypotheses were analysed separately with regards to risky behaviour practices.

## Results

### *Background characteristics*

A majority of the subjects (76.5%) were 25 to 39 years old. Malays comprised 61.3% of the subjects. Most (61.5%) had secondary education (about seven to nine years of formal education), and 28.3% were labourers.

### *Injecting practice*

Most of the subjects (61.7%) started their drug habit between the age of 16 and 21 years. The initial drug primarily used was cannabis (57.0%), followed by heroin (31.7%), though everyone finally were heroin abusers. The initial mode of administration was smoking, seen in 58.8% and *chasing the dragon* in 25.0%. The median age subjects started taking drugs was 17 years old while the median age subjects started injecting was 25 years old. There was a gradual transition in the mode of administration from smoking or *chasing the dragon* to injecting. Listed below are three main transition patterns of administering drug by the samples in the study:

a) Smoking followed by injecting
b) Smoking followed by *chasing the dragon*, followed by injecting
c) *Chasing the dragon* followed by injecting

Rotily & Galinier-Pujol (1995) and Baker *et al.* (1994) found that the frequency of injecting had a positive relationship with high-risk behaviour. This study also found that the frequency of injecting increased initially from two times a day to about three to four times daily. This behaviour would significantly increase the likelihood of acquiring HIV as 39.0% sometimes shared and 20.8% often shared injecting equipment. Besides that 68.8% only used tap water to clean their syringes. This practice is merely to unclog the syringe, and would not have any decontaminating effect.

### *Sexual behaviour*

Slightly more than half (51.0%) of the subjects were not involved in any sexual activity in the past three months. It is interesting to note that while there was a high number of abstainers, those who had sexual contact practised risky behaviour. Sexual behaviour was divided into four categories, these being homosexuality, sex with a steady partner, sex with a casual partner, and sex with commercial sex workers (CSWs). In all four categories the usage of condom was minimal. In the last three months, 62.5% of subjects were involved in homosexuality and among them 4.8% never used condoms. A total of 40 subjects or 10% had sex with a 'steady' partner and 9% of them never used condoms. About 15.8% had sex with a 'casual' partner and of these, 14.5% never used condoms. Of the 30.5% who had sexual encounters with CSWs, 25% never used condoms. An individual could have more than one type of sexual encounter in the past three months and institution subjects used the three months prior to admission timeframe to answer this question.

### *Knowledge, attitude and belief*

Twelve proven statements were put forward to subjects to assess their knowledge. A rating scale was used and each correct answer was given two marks (Table I).

The majority of subjects had a high knowledge about HIV/AIDS. This was similar in institutional and non-institutional subjects.

The cognitive model in the theoretical framework suggests that beliefs are the primary determinants of attitudes. Based on this, the pilot study interviews that

Table I. Knowledge of IVDU subjects on HIV/AIDS by instituttions and non-institutions

| Marks | Knowledge | Institution | Non-Institution |
|---|---|---|---|
| 0 – 6 | No Knowledge | 0.3% | - |
| 7 – 12 | Low Knowledge | 3.6% | - |
| 13 – 18 | Medium Knowledge | 9.4% | 7.5% |
| 19 – 24 | High Knowledge | 86.7% | 92.5% |
| Total | | 100.0% | 100.0% |

were carried our identified subjecrs' beliefs towards HIV/AIDS. These beliefs were built into rhe questionnaire to assess the attitude of subjects. Results indicate that subjects showed readiness to adopt a positive attitude towards HIV/AIDS. This dara could be biased, as the high number of institutional cases in rhe study could have influenced this finding. Institutional subjects tend to have a more positive attirude. Cultural factors also had some bearing in influencing subjects. For example, 27% of the subjects mentioned that traditional medicine could cure AIDS. This belief was based on experience with friends who underwent traditional medication and were subsequently tested HIV negative. Note thar this was the subjects answer on their peers' status. They did not consider the possibility of rhe 'window period' and of an initial false positive result. Another cultural factor that influenced subjects was usage of condoms. Almost one fifth (19.7%) of the subjects believed thar the usage of condoms was against their religion.

*Economic, peers and Government factors*

A majority of the subjects earn about RM20 to RM50 a day and a rube of heroin costs RM10. Judging from the frequency of injecting, two thirds of their money were spent on drugs. The price of drugs has also increased slightly since they first started using drugs. This factor could have influenced addicts to change to injecting drugs. The first finding indicates that as the purity of drugs decteases, the likelihood of injecting among the addicts increases. One inherent limitation to this finding is that the purity levels were determined based on the assessment by subjects. No laboratory analysis was carried out to determine purity levels. Subjects reported lower purity levels currently compared to when they first starred injecting. Besides, the frequency of injecring was also increased. The frequency of injecting could also increase due to the need for a higher dosage after a while. Nevertheless, this finding reported by Navaratnam & Choo (1980) supports the conclusion that decreased purity of drugs could significantly increase intravenous use and consequently infection rates among rhis population. The influence of peers seems to be a significant factor in influencing an IVDU to practise risky behaviour as 81.7% of the subjects reported this. Often the sharing process begins when an IVDU is first introduced to injecting. A certain skill is required to inject and initially peers play an imporranr role helping a new recruit overcome this technical problem. The second finding indicates a positive relationship between these two variables. Navaratnam & Foong (1996) also found that peers significantly influenced an addict to start injecting initially.

The inconsistency of policies concerning the use of syringe could possibly create a negative impact on the IVDU population with regards to HIV/AIDS. Most subjects (83.6%) did not have problems purchasing their needles from a pharmacy but expressed fear of being arrested with this paraphernalia even if they did nor possess any drug at that time. The third finding suggests that addicts who were caught with injecting paraphernalia were more likely to start sharing them, thus increasing the risk of HIV/AIDS.

## Discussion

The socio-demographic profile of subjects in the study shows that the majority are from the productive age group with lower secondary education. Our findings are in agreement with government statistics, which indicate that of the three erhnic groups, the Malays are mainly effected by this problem. The Ministry of Health Malaysia (1997) figures also indicate similarities with this finding where 84.12% or 18,132 people infected with HIV are from this age group and 72.8% of these are Malay. Figures also show that 32.7% of the addicts in Malaysia work as labourers (Narcotics Report, 1996). Injecting patterns show that an IVDU often starts the drug career at a very young age, normally smoking or *chasing the dragon* first, and gradually starts injecting a few years later. The type of drug abused changes almost at the same time with the change in mode of administration. The frequency of injecting increases after a certain period. Sharing injecting paraphernalia was common and cleaning injecting paraphernalia hygienically

was uncommon. Similar risky injecting behaviour patterns were found by other workers (Navaratnam & Foong, 1996; Wodak *et al.*, (1995; Chitwood *et al.*, 1995; Booth, 1994; Zheng *et al.*, 1994; Stephens, 1993; Panda *et al.*, 1997).

Since heroin is the primary drug abused in Malaysia, the high rate of sexually non-active subjects could be due to heavy usage of opiates. A large proportion of the subjects was unmarried. This could have contributed to the reduced sexual encounters. But those who practised it exhibited risky sexual behaviour. In all four sexual categories, the usage of condoms was minimal and prostitutes were frequently visited. This risky sexual behaviour could have a multiplicative effect. Panda *et al.* (1997) also reported low usage of condoms in Calcutta among IVDUs who frequented CSWs. Kaell (1994), Baker *et al.* (1994), Gossop *et al.* (1993), and Raffaelli *et al.* (1995) also reported low use of condoms among IVDUs.

In this study there was a positive correlation between knowledge and attitude. This finding could have been distorted by the representation in the institution category as subjects in this category normally have better understanding of the epidemic compared to those subjects in the streets. This data differs from the model suggested by Fishbein and Ajzen (1971) on knowledge, attitude, beliefand practice. The findings show that even though subjects' knowledge was high and had a positive attitude, they continued to practise risky behaviour. This data suggests that knowledge and attitude had no bearing in influencing an IVDU's behaviour. Other situational factors could have taken precedence over these individual factors and all three hypotheses showed positive relationships thus confirming that external factors have a significant impact in influencing an IVDU to practise risky behaviour. A previous study by Navaratnam & Foong (1996) in Malaysia showed similar trends where IVDUs with good knowledge continued to practise risky lifestyle.

IVDUs in this study felt that drug purity levels have dropped but government statistics do not indicate this. Heroin purity levels increased in 1997 compared to 1996 (Narcotics Report, 1997). This difference could be due to variation in geographical locations. The majority of the samples were from central Malaysia and this could have significantly influenced the results of the study. High purity levels were recorded only in northern and eastern states bordering Thailand (Narcotics Report, 1997). It is also possible that distributors or drug pushers may have different preparation techniques that are influenced by the demand and supply in the market.

Peer influence contributes to the progression of drugs abused and the change in drug administration in an addict's history. This was also shown in other studies (Hilal, 1997; Ahmad & Ara, 1997; Hughes *et al.*, 1980; Panda *et al.*, 1997).

The policies formulated to fight drug addiction were more oriented towards deterrence in Malaysia. Since the emergence of HIV/AIDS in the IVDU population such policies may not have had the desired effect. The government has been accused of indirectly contributing to the spread of HIV through its 'drastic and draconian' policies and laws aimed at reducing the trafficking in and demand for drugs (SUN, 3 March 1998). This study supports the suggestion that existing enforcement policies may increase HIV infection rates among the IVDU population and calls for alternative approaches for dealing with intravenous drug using popularions.

References

Ahmed SK & Ara N (1997). Patterns and trends of buprenorphine abuse - an erhnographic study. In: Navaratnam V & Devi V (eds), Exploratory *Studies on Drug Abuse in the Asian Region – 1996, Penang*. Centre for Drug Research, University Science Malaysia. International Monograph Series 10.

Baker A, Kochan N, Dixon J, Wodak A & Heather N (1994). Drug use and HIV risk raking behaviour among injecting drug users in treatment in Sydney, Australia. *Drug-Alcohol-Dependence* 34, 155-160.

Bandura A (1976). Behaviour theory and the models of man. In: Hollander EP & Hunt RG (eds), *Current Perspective in Social Psychology*. New York: Oxford University Press.

Booth RE (1994). Predictors of unsafe needle practices: injection drug users in Denver. *Journal of Acquired Immune Deficiency Syndromes* 7, 504-508.

Chitwood DD, Rivers JE & James K (1995). A comparison of HIV related risk behavior of streets recruited and treatment program recruited injection drug users. In: Fisher DG & Needle R (eds), *AIDS and Community-Based Drug Intervention Programs, Evaluation and Outreach*. New York: Harworth Press, Inc.

Fishbien M & Ajzen I (1975). *Belief, Attitude, Intention and Behavior: An Introduction to Theory and Research*. Philippines:Addison-Wesley Publishing Company.

Gossop M & Griffiths P (1993). Severity of heroin dependence and HIV risk in sexual behavior. *AIDS Care* 5, 149-157.

Hilal HO (1997). Primary drug prevention in Malaysia. In: Navartnam V & Devi V (eds), *Exploratory Studies on Drug Abuse in the Asian Region*. Centre for Drug Research, University Science Malaysia. International Monograph Series 10, pp. 135-145.

Hughes PH, Venulet J, Khant U, Medina Mora ME, Navaratnam V, Poshyachinada V, Rootman I, Salan R & Wadud KA (1980). *Core Data For Epidemiological Studies of Nonmedical Drug Use*. World Health Organization, Geneva.

Kaell K (1994). The risk of HIV infection for non injecting sex partners of injecting drug users in Stockholm. *AIDS Education Preview* 6, 351-364.

*Ministry of Health Report (1995)*. Ministry of Health Malaysia.

*Ministry of Health Report (1997)*. Ministry of Health Malaysia.

*Ministry of Health Report* (28 Februaty, 1998). Ministry of Health Malaysia.

*Narcotics Report (1996). National Narcotics Agency*. Ministry of Home Affairs Malaysia.

*Narcotics Report (1997). National Narcotics Agency*. Ministry of Home Affairs Malaysia.

Navaratnam V & Choo PY (1980). *An Overview of Dadah Users in a High Risk Area-Rifle Range Flats, Penang*. Centre for Drug

Research, University Science Malaysia.

Navartanam V & Foong K (1996). *A Study on Intravenous Drug Use and AIDS Knowledge among Heroin Addicts* Centre for Drug Research, University Science Malaysia., Penang, Research Report Series 30.

Panda S, Deb BC, Sarkar K, Hanzzo CZ, B Jaya L, Singh NY, Das N, Argawal A & Chatterjee A (1997). Injecting drug use in Calcutta: a potential focus for an explosive HIV epidemic. *Drug and Alcohol Review* 16, 17-23.

Raffaelli M, Siqueira E, Payne-Meritt A, Compos R, Ude W, Greco M, Greco D, Ruff A & Halsey N (1995). HIV related knowledge and risk behavior of street youth in Belo Horizonte, Brazil, The Street Youth Group. *AIDS Education Preview* 7, 287-297.

Rotily M & Galinier-Pujol A (1995). Risk behavior of inmates in South-Eastern France. *AIDS Care* 7, 589-593.

Stephens C (1993). Needle use behavior. In: Brown BS & Breshner GM (eds), *Handbook on Risk Of AIDS: Injection Drug Users And Sexual Partners*. Westport. Connecticut: Greenwood Press, pp. 116-136.

Sun Newspaper (1998). Marina: Government partly responsible for spread of HIV. Sun, 3 March 1998.

Wodak A, Rurter S & Dolan K (1995). HIV risk exposure on injecting drug users in Sydney. *Drug Alcohol Review* 14, 213-222.

XI International Conference on AIDS (1996). *Final report: The Status and Trend of the Global HIV/AIDS Pandemic*. Vancouver.

Zheng X, Tian C, Choi KH, Zhang J, Cheng H, Yang X, Li D, Lin J, Qu S & Sun X (1994). Injecting drug use and HIV in Southwest China. *AIDS* 8, 1141-1147.

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