

Drug Use among Schoolchildren in Six Indonesian Cities

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This paper details the results of a survey of 4,252 school children, aged 10 to 20 years across six Indonesian cities, which explored patterns of past and current drug use. Public and private schools participated in a national drug awareness education program, and during the operation of this campaign, students who were considered at low risk of drug use were selected to be invited to participate in the survey. Results revealed different patterns of drug use for males and females, and from city to city. Students in Jakarta and Makassar reported the highest lifetime prevalence across the sample, while students in Cirebon and Batam reported the lowest lifetime prevalence. The median age at which students first used drugs was 14 years, with students in Manado, Batam and Dumai significantly younger when they first used drugs, than those in Cirebon, Makassar and Jakarta. Students who reported still using drugs tended to have started using drugs and drinking alcohol at a younger age, than those who no longer used drugs. More than three times as many male students reported that they had used drugs compared to female students, and these gender differences were strongest in Makassar and Jakarta. There were no gender differences in the age at which students first started using drugs, but there were some gender differences across cities in age of first use. The most common drug that students reported first using was cannabis, followed by crystal methamphetamine, ecstasy (8.4%), heroin, and benzodiazepines, with fewer reporting using alcohol and other drugs. The most recently used drug was more likely to be the same drug that students first used than other drugs, particularly if the first drug they had tried was cannabis or benzodiazepines. Boys were far more likely to have used cannabis as their first drug, while only half as many girls reported first using marijuana, and significant numbers of girls first using ecstasy, and benzodiazepines. Possible reasons for the regional and gender variations in patterns of drug use were explored, and it was concluded that the findings clearly supported school-based interventions for drug use prevention with primary school aged children.

With an estimated 245,452,739 people (July, 2006 estimate) (CIA, 2007), Indonesia is the fourth most populous nation on earth, and its relatively young population structure means that its youth are an important key to the country's economic success. More than half of Indonesia's estimated 245 million people are aged between 12 and 30 years (United Nations Office on Drugs and Crime Regional Centre for Asia and the Pacific, 2006). The population is also highly urbanised, with around half of the population residing in urban areas (United Nations Office on

Drugs and Crime Regional Centre for Asia and the Pacific, 2006). Like other rapidly developing countries in East and South-East Asia, Indonesia has a growing young middle-class, significant internal migration, and a substantial and increasing gap between rich and poor (Devaney, Reid & Baldwin, 2005). These and other factors, such as law enforcement, trafficking, and corruption, have led to changing patterns of drug use and misuse amongst Indonesia's young people over recent years. Prior to the mid-1990s, the main drugs of abuse were cannabis, benzodiazepines and alcohol, with only a low level abuse of opiates and cocaine (Al Bachri, 1992; Devaney, Reid & Baldwin, 2005). Since the 1990s, a surge in drug production and abuse in Indonesia has led to drug issues becoming a top government public health priority (United Nations Office on Drugs and Crime Regional Centre for Asia and the Pacific, 2006). The Indonesian government has moved from a position of complete denial of drug use in the late 1990s to an acknowledgement of the existence of drug use and a fourfold increase in treatment facilities for people with problematic use by 2001 (Reid & Costigan, 2002).

Treatment, arrest, seizure and police data suggests that Indonesian use of all the major drugs is increasing, and broader figures suggest that cannabis, ecstasy, and amphetamine type substances (ATS) use will likely continue to surge throughout East and Southeast Asia (United Nations Office on Drugs & Crime, 2006). Despite rapidly increasing numbers of drug users and the rise of problematic drug abuse in Asia, this region has the lowest proportion worldwide of persons receiving treatment for substance dependence (132 per million inhabitants) (United Nations Office on Drugs & Crime, 2006). Treatment demand in Indonesia is greatest for opiate addiction, followed by ATS abuse (UNODC, 2006). More than one third (52 million) of the world's cannabis users reside in Asia, but in terms of prevalence, cannabis use is relatively low in Asia (2.2% of the population) (UNODC, 2006).

The use of drugs in Indonesia is currently on the rise, with a national survey conducted in 2004 identifying that approximately 13 million Indonesians (6%) had used illicit drugs at least once in their lifetime, and 2.2 million (1.06% of the total population) defined as regular drug abusers (National Narcotics Board Indonesia, 2005). Other studies have suggested an estimated six million users of illicit drugs, with between 2.9 and 3.9 million of these being intravenous drug users (IDUs) (Devaney, Reid & Baldwin, 2005; Lorete, 2005). The number of drug-related arrests has increased dramatically since 2000, almost doubling each year since 2004 (UNODC, 2006). The most commonly used illicit drugs in Indonesia are heroin, ecstasy, cannabis, ATS, benzodiazepines, solvents and cocaine, with widespread poly-drug use (Devaney, 2005; Irwanto, 2001; Padmohoedjo, 2005; Reid & Costigan, 2002). Cannabis is the most widely used (71%) illicit drug in Indonesia, followed by sedatives (21%), methamphetamine (known as "shabu-shabu") (15%), ecstasy (9%), and heroin (known as "putaw") (5%) (National Narcotics Board Indonesia, 2005). Drugs are easy to obtain and are available for sale at food stalls, in shopping malls, beauty salons, and on university campuses (Gordon et al., and Irwanto, cited in Reid & Costigan, 2002).

It has recently been estimated that there are between 145,000 and 170,000 intravenous drug injectors (IDUs) in Indonesia (Pisani, 2006). Other estimates have put the number of IDUs at between 600,000 and one million (Reid & Costigan, 2002). Of grave concern are the rapidly increasing numbers of intravenous drug users who are infected with Human Immunodeficiency virus (HIV) and Hepatitis C virus (HCV). In 2004, it was estimated that 41% of Indonesians with HIV/AIDS had been infected as a result of intravenous drug use, and 80% of new cases were linked to IDU (Centre for Harm Reduction & AHRN Country Office Indonesia, 2004; Pisani, Garnett, et al., 2003; UNAIDS, UNICEF & WHO, 2004). This constituted a dramatic shift from the less than 1% of HIV/AIDS cases linked to IDU prior to 2000 (Irwanto, 2001; Jalal, Abednego, Sadjimin & Linnan, 1994). Studies of IDUs have found prevalence rates for HIV at 35 to 56%, and prevalence rates for HCV at 60-80% (Irwanto, 2001; Reid, 2001; Reid & Costigan, 2002). Sharing of injecting equipment is commonplace, with surveys showing that between 85 and 100% of IDUs share needles or use potentially contaminated equipment (Pisani, Dadun, Suchaya, Kamil & Jazan, 2003). This is due to poor access to, or unaffordability of, clean equipment, as well as fear of being arrested if caught carrying needles (Reid, 2001; Setiawan, et al., 1999). Furthermore,

many IDUs buy and sell sex, and engage in unprotected sex, often with multiple partners (Pisani, Dadun, et al., 2003).

Cannabis is readily available and relatively cheap in Indonesia, as it is cultivated locally, particularly in Northern Sumatra (especially the province of Aceh). There has been a significant increase in cannabis abuse in Indonesia since 1998 (United Nations Commission on Narcotic Drugs, 2000). Heroin is the most commonly injected drug, with most heroin entering Jakarta from Afghanistan via Pakistan or from Thailand via Bangkok and Singapore. Heroin abuse now characterises the chronic, drug-dependent population in many countries in south and east Asia, and it tends to be associated with poly-drug patterns of consumption (United Nations Commission on Narcotic Drugs, 2000). Ecstasy is usually ingested orally and tends to be smuggled into the country from Europe and China. Ecstasy is also manufactured locally and laboratories have been discovered in West Java and Makassar in Southern Sulawesi. Methamphetamine pills tend to come from Myanmar and Thailand, while crystalline methamphetamine (shabu-shabu), which is smoked or injected, is usually trafficked from Hong Kong and the Philippines, or manufactured in local clandestine laboratories (National Narcotics Board, 2003; UNODC, 2006). There has been a dramatic increase in methamphetamine use in the Southeast Asian region since the late 1990s, with a fourfold increase in use in Thailand, and the substance is the primary drug of abuse in the Philippines (United Nations Commission on Narcotic Drugs, 2000). The use and abuse of benzodiazepines has been steeply rising in Indonesia over recent years, and over two and a quarter million illicit benzodiazepines were seized locally in 2005, with one out of 20 drug-related arrests involving this class of sedatives (UNODC, 2006).

For many years, the only data collected on drug use in Indonesia consisted of treatment data and arrest and seizure data. Since the establishment of Pusdatin, the Data and Information Centre under the Indonesian Ministry of Health in 2003, more reliable indicator data on drug abuse has been systematically collected from a network of treatment programs and police offices, using standard forms. Although they are valuable, these types of data tend to focus on illicit drugs and drug abuse, and give few insights into non-problematic, recreational drug use, short-term drug use, and patterns of licit drug use. More recently, large scale household surveys, such as that carried out by the National Narcotics Board in 2005 (Padmohoedjo, 2005) have shed light on differing patterns of drug use in various locations and amongst different groups. However, there are still large gaps in the research literature in relation to the range of drug use amongst young people who are not in treatment or in conflict with the law. There remains a great need for improved data collection and understanding of the patterns and scale of, drug use and misuse in developing countries, particularly those in Southeast Asia, where there is a growing problem of substance dependence and IDU-related infectious disease (United Nations Commission on Narcotic Drugs, 2000).

One problem with investigation of drug use prevalence is that there is sometimes confusion in the existing literature about the difference between drug use and drug abuse. Often, illicit drug use is referred to as drug abuse, even when it is infrequent and unproblematic. Similarly, the use of licit substances such as alcohol and cigarettes is often not taken into account when drug use is measured. Another problem is that the majority of drug use studies tend to focus on Jakarta, and there is a paucity of comprehensive survey data that includes areas from across the entire country (Devaney, Reid & Baldwin, 2005). Drug reporting and recording in the provinces tends to be incomplete, and competence and capacity for drug reporting and recording in Indonesia is generally under-developed (Devaney, Reid & Baldwin, 2005; UNODC, 2004).

Undisputed is the fact that drug use (both licit and illicit) amongst young people is increasing across Indonesia, throughout both urban and regional areas, and across all sections of society (Devaney, Reid & Baldwin, 2005). Access to drugs has become easier and local production has made drugs more affordable. A national survey of drug use prevalence amongst 13,699 high school and university students, conducted in 2003, indicated lifetime prevalence of illicit drug use at 5.8%, annual prevalence at 3.9%, and current prevalence at 2.8%. The most frequently used illicit drug was cannabis, followed by (in order) benzodiazepines, ecstasy,

methamphetamine and heroin (United Nations Office on Drugs and Crime Regional Centre for Asia and the Pacific, 2005). Another study of Jakarta high schools found that 42 % of boys and 6% of girls had tried drugs, with the most consumed drug being cannabis (Pisani, cited in Devaney, Reid & Baldwin, 2005). A large national survey that sampled over 14,000 residents of urban and rural households as well as urban boarding houses, found a lifetime prevalence of drug abuse amongst 10 to 19 year olds of 1.2% (households) to 8.9% (boarding houses) (Padmohoedjo, 2005).

Most available studies have found significant gender differences in drug use in Indonesia, with young males far more likely to use drugs of every type than young females. It has been reported that 60% to 80% of drug users aged 15 to 25 years are male, with females, on average, accounting for only 8% to 20% of the total number of drug users (UNODC, 2004). Pisani (2006) estimated that 90% of intravenous drug injectors in Indonesia in 2002 were male, with almost all being aged between 15 and 30 years.

Some studies suggest that drug use in Indonesia is occurring at increasingly younger ages, with one retrospective study reporting that most intravenous drug users (IDUs) began using drugs at 13 to 14 years of age (Devaney, Reid & Baldwin, 2005). Most reported that their drug use had begun with minor tranquilisers or benzodiazepines, or with cannabis. Of the 7,140 narcotic-related arrests made in 2003, 87% of those arrested were aged below 15 years, with the majority of cases in Jakarta, North Sumatra and East Java (National Narcotics Board, cited in Devaney, Reid & Baldwin, 2005). It has been suggested that Indonesian youth may be using drugs at even younger ages because of wider availability, curiosity and peer pressure (National Narcotics Board, 2003; UNODC, 2004). In recent years, drug issues and HIV prevention have become a focus in the training of junior and senior high school teachers and student leaders, and a life skills program that includes education on drug refusal skills has been part of the school curriculum since 1999 (Devaney, Reid & Baldwin, 2005). In addition, drug prevention programs that feature youth groups, and promote drug-free activities, are operated by NGOs in collaboration with the Ministry of Education (National Narcotics Board, 2002). One such NGO is Yayasan Cinta Anak Bangsa (YCAB), which has been working in the area of youth drug use prevention through education and provision of vocational opportunities since 1999.

The current study aimed to explore drug use patterns amongst school children, aged 10 to 20 years, in urban settings across Indonesia. The focus of this study was on use of both licit and illicit drugs, and both initial and recent drug use. The study also aimed to explore motivations for drug use and aspects of drug use such as usual place of use and parental knowledge of use.

Method

Participants

A sample of 4,252 students (43.1% male, 56.9% female) from six Indonesian cities completed the questionnaire. The students ranged in age from 10 to 20 years, with a mean age of 15.12 years. Students were recruited while they attended a national drug awareness campaign conducted by Yayasan Cinta Anak Bangsa (YCAB), a Jakarta-based non-government organization, in conjunction with the Indonesian Department of Education. The data was collected in the cities of Makassar (pop. = 1,148,204), Dumai (pop. = 206,732), Jakarta (pop. = 8,603,349), Cirebon (pop. = 272,993), Manado (pop. = 411,512), and Batam (pop. = 536,831) (CIA World Factbook, 2006).

Materials

A 22-item questionnaire was designed for the specific purpose of exploring aspects of the drug use patterns of Indonesian school children. This questionnaire consisted of three demographic items (city, age and sex) and 19 items about drug use patterns, motivations, and

parental knowledge of drug use. Several of these questions provided for categorical responses (Yes/No); others provided for multiple-choice responses (e.g., type of alcohol consumed); while others required written responses (e.g., kinds of drugs used). The items addressed types and quantities of drug use, first drug used, introduction to drug use, usual place of use, motivation for use, and parental knowledge of use. Some items addressed alcohol and cigarette use specifically (the alcohol and cigarette items were omitted in Batam).

Procedure

A national drug awareness educational program was conducted in each city during 2000 and 2001. During the campaign, information about drugs and drug effects was presented in an educational and entertaining format, to selected school children in the six selected cities that were aged 10 and over. Participating schools were selected on the basis that they were likely to have low drug-use. These public and private schools were closed for the day to enable attendance. Within each school population, children were selected by their school principals on the basis that they were the least likely to have experienced drug use. At the end of the educational program, students were randomly selected on the basis of their school and seat block to be invited to participate in the survey. Approximately five volunteers were taken from each school per block, which provided about 15 to 20 students per seat block. This selection method meant that schools were evenly represented.

Results

Descriptive aspects of the sample

As can be seen in Table 1, the largest number of students was recruited in Manado, and the smallest number was recruited in Dumai. There were significantly more males in the sample than females.

Table 1

Participants across gender and city

City	Males	Females	Total N (%)
Makassar	272	311	583 (13.7)
Dumai	135	104	239 (5.6)
Jakarta	324	363	687 (16.2)
Cirebon	288	390	678 (15.9)
Manado	437	855	1292 (30.4)
Batam	378	395	773 (18.2)
Total N (%)	1834 (43)	2418 (56.9)	4252 (100)

Contingency Chi-Square analyses were carried out to investigate patterns of reported drug use. For these analyses, a standardised residual of 3.3 ($p < .001$) was used to identify those cells which differed significantly from the overall sample (a conservative α -level to accommodate large sample sizes and large number of comparisons).

Lifetime prevalence of drug use

Across the whole sample, 263 students (6.2%) reported that they had tried drugs. The proportion of students who reported having used drugs varied significantly across the cities, χ^2 ($N = 4252$, $df = 5$) = 141.44, $p = .000$, with students in Makassar and Jakarta reporting twice the average drug use (12.2 – 12.8%), and those in Cirebon and Batam reporting the least drug use (< 2%). As a proportion of the entire sample, 3.2% of students had last used cannabis, 1.4% had last used crystal methamphetamine, 0.8% had last used benzodiazepines, 0.5% had last used heroin, and 0.4% had last used ecstasy.

Prevalence of current use

Prevalence of current illicit drug use was 6.2% across the whole sample. Of the 263 students who had tried drugs, 22.8% (26.2% of the boys, 13.9% of the girls) were still using drugs at the time of the survey. The most commonly reported last drug they had used was cannabis (51%), followed by crystal methamphetamine (ice or shabu-shabu) (22.4%), benzodiazepines (12.5%), heroin (putaw) (8%) and ecstasy (6%). Those whose first drug was street heroin, or putaw, were more likely to still be using drugs, with 11 of the 20 (55%) of those who reported first using heroin still using drugs. Seven of the 20 (35%) reported that the last drug they used was heroin, while 5 (25%) reported last using crystal methamphetamine, three (15%) reported last using ecstasy, four (20%) reported last using cannabis, and one (5%) reported last using benzodiazepines. 69.1% of those who started out using cannabis reported that the last drug they used was cannabis, and 76.5% of those whose first drug was a benzodiazepine reported that their last drug was a benzodiazepine. No respondents who reported first using benzodiazepines or alcohol reported that their last drug use was of heroin, and only eight of 165 (4.8%) whose first drug was cannabis reported that their last drug was heroin. Those whose first drug had been a benzodiazepine were the least likely to be still using drugs (11.8%). These figures probably reflect a greater tendency towards poly-drug use amongst IDUs than amongst non-IDUs, rather than a tendency to change drug of choice.

Independent groups t-tests were conducted to investigate differences between students who reported that they were still using drugs and those who were not. For these analyses, a conservative α -level of $p < .01$ was used to accommodate multiple analyses. Those who identified as still using illicit drugs at the time of the survey were significantly younger ($M = 13.40$ years, $SD = 2.17$ years) than those who were not still using drugs ($M = 14.36$ years, $SD = 1.49$ years), $t(254) = -3.88$, $p = .000$. They were also significantly younger ($M = 12.13$ years, $SD = 3.18$ years) when they first tried alcohol than those who were not still using drugs ($M = 14.13$ years, $SD = 2.15$ years), $t(129) = -4.05$, $p = .000$. Those still using drugs tended to start smoking at a younger age ($M = 11.78$ years, $SD = 2.92$ years) than those not still using drugs, although this difference was not significant, $t(185) = -2.60$, $p = .010$. Students who were still using drugs also smoked more cigarettes per day ($M = 15.27$ cigarettes, $SD = 12.75$ cigarettes) than those who were not still using illicit drugs ($M = 8.06$ cigarettes, $SD = 5.69$ cigarettes), $t(173) = 5.17$, $p = .000$; and drank more alcohol per week ($M = 5.70$ drinks, $SD = 5.36$ drinks) than those who were not still using illicit drugs ($M = 2.38$ drinks, $SD = 2.53$ drinks), $t(66) = 3.49$, $p = .001$.

Use of cigarettes and alcohol

Respondents in five of the six cities (excluding Batam) were questioned about current use of cigarettes and alcohol. Of these respondents, 344 (9.9%) reported that they were current drinkers of alcohol, and 422 (12.1%) reported that they were current smokers. Of those who reported drinking alcohol, most (43.5%) said that they drank an average of one glass of alcohol per week, with the average being 3 glasses per week, and consumption ranging from one to 20 drinks per week. Beer was the most popular alcoholic drink, with 36.2% reporting beer consumption. Smokers reported smoking an average of 9 cigarettes per day, with a range from one to 80 cigarettes per day.

Most commonly used drugs

Cannabis was the most commonly used first drug (62.7%), followed by crystal methamphetamine (9.9%), ecstasy (8.4%), heroin (7.6%), and benzodiazepines (6.5%), with 3.4% reporting using alcohol and 1.5% other drugs. The type of drug students reported first using varied across cities, $\chi^2(N = 263, df = 30) = 71.53$, $p < .001$. In Manado, there was a greater spread across types of drugs first used, with 12.7% having first used heroin, 15.5% crystal

methamphetamine, 15.5% ecstasy, 33.8% cannabis, 14.1% benzodiazepines, and 4.2% alcohol. In the other cities, cannabis was by far the most likely drug to have been used first (50 – 78.4%). Similarly, Manado students reported a wider range of most recently used drugs, with only 31% reporting that they most recently used cannabis, compared to 45 – 67% of students in other cities.

Gender differences

Across the whole sample, there were gender differences in drug use, with more than three times as many male students (10.4%) reporting that they had used drugs compared to female students (3.0%). These gender differences were strongest in Makassar and Jakarta (20% boys vs. 5% girls). There were also significant gender differences in the first drug students reported using, χ^2 ($N = 263$, $df = 6$) = 38.26, $p < .001$. Whereas the majority of boys (73.3%) reported using marijuana, only half as many girls reported first using cannabis (34.7%), with 16.7% first using ecstasy, and 13.9% using benzodiazepines. A greater percentage of girls (11.1%) used heroin as their first drug than boys (6.3%) (see Table 2).

Table 2

Differences across gender for first drug used

First drug	Males N (%)	Females N (%)	Total N (%)
Heroin	12 (6.3)	8 (11.1)	20 (7.6)
Crystal methamphetamine	15 (7.9)	11 (15.3)	26 (9.9)
Ecstasy	10 (5.2)	12 (16.7)	22 (8.4)
Cannabis	140 (73.3)	25 (34.7)	165 (62.7)
Benzodiazepines	7 (3.7)	10 (13.9)	17 (6.5)
Alcohol	6 (3.1)	3 (4.2)	9 (3.4)
Other	1 (.5)	3 (4.2)	4 (1.5)
Total N (%)	191 (72.6)	72 (27.4)	263 (100)

Age differences

The age at which students first used drugs ranged from 7 to 18, with a median age of 14. There were no gender differences in the age of first drug use, $F < 1$, but some differences across cities, $F(5, 250) = 6.25$, $p < .001$, with average first drug use at a younger age in Manado (13.6 years), Batam (12.7 years), and Dumai (13 years), and older in Makassar (14.6 years) and Cirebon (15 years). There were no large differences across the type of drug that students of different ages reported first using or currently using. The average age of starting smoking was 12.91 years ($SD = 2.39$ years), and the average age of first drinking alcohol was 13.74 years ($SD = 2.28$ years). The average age of initiating smoking did not vary significantly between cities, but the average age of initiating alcohol consumption did vary significantly between cities, $F(4, 339) = 3.61$, $p = .007$ (see Table 3).

Table 3

Mean age of first drug use by city

City	Age of first illicit drug use (yrs) (SD)	Age of first alcohol use (yrs) (SD)	Age of first cigarette use (yrs) (SD)
Makassar	14.6 (1.6)	14.6 (1.6)	13.2 (2.1)
Dumai	13.0 (2.3)	12.7 (1.5)	13.2 (2.3)

Jakarta	14.3 (1.4)	14.3 (1.9)	13.1 (2.2)
Cirebon	15.2 (1.0)	13.2 (2.7)	12.9 (2.2)
Manado	13.6 (1.6)	13.5 (2.4)	12.4 (2.8)
Batam	12.7 (2.7)	N/A	N/A
Overall	14.1 (1.7)	13.7 (2.3)	12.9 (2.4)

Initiation to drug use

Of the 263 students who had tried drugs, the overwhelming majority had been introduced to drugs by friends, either friends at school (39.5%) or friends outside of school (49.4%). A smaller proportion (9.2%) had been asked to try drugs by a brother, sister, or other family member. Only 1.9% had been asked to try drugs by someone who was not a friend or family member.

Reasons for drug use

Most students (71.5%) reported using drugs because they wanted to simply try it. Others reported that they used drugs because of family problems (6.1%), relationship problems (8%), frustration (8.4%), or because they were pushed into it by someone else (1.9%).

Usual place of drug use

Most students who had used drugs reported that the usual place for their use was at a friend's house (46%), while 17.2% reported usually taking drugs in their own home, and 14.9% tended to use drugs at an entertainment centre. Drug use was also reported to take place at school (8.4%), at parties (8%), in rest rooms (2.3%), and in other unspecified locations (3.1%).

Parental knowledge of drug use

Most students who had tried drugs reported that their parents were unaware of their use (77.9%). Parents of students who were consuming alcohol were reported as more likely (34%) to be aware of their son's or daughter's drinking.

Differences between those who had tried, but no longer use drugs, and those who still used drugs

Those who reported still using drugs started using drugs at a younger age ($M = 13.4$ years, $SD = 2.2$ years) than those who no longer used drugs ($M = 14.4$, $SD = 1.5$ years). They also first drank alcohol at a younger age (12.1 vs 14.1 years). They reported drinking twice as much alcohol each week (5.7 glasses of alcohol vs 2.4 glasses) and smoking nearly twice as many cigarettes each day (15.3 vs 8.0 cigarettes) as those who no longer used drugs.

Discussion

Differences across cities

The current study found that there was a significant difference across the six cities in relation to the proportion of students who reported having used drugs. Students in Jakarta and Makassar were much more likely to report having used drugs than those from other cities, particularly Cirebon and Batam. With some exceptions, there was higher prevalence in the larger cities than cities with smaller populations. Padmohoedjo's (2005) study had found higher lifetime

prevalence of drug use amongst 10 to 60 year olds in Jakarta and Yogyakarta, but unlike the current study, found prevalence in Makassar to be relatively low.

Gender differences

The gender differences in drug use that was found in the current study was quite marked, with male students three times as likely to report that they had used drugs than female students. More than three times as many male students (10.4%) reported that they had used drugs compared to female students (3.0%). The gender differences were strongest in Makassar and Jakarta, both large cities of well over a million people. A recent Australian study of 16 to 24 year olds found that lifetime prevalence of illicit drug use for males was 52%, and female lifetime prevalence was 47% (Premier's Drug Prevention Council, 2005). Thus, gender differences in drug use seem to be consistent across developed and developing countries.

Lifetime prevalence of illicit drug use

The proportion of students in the current study (6.2%) who reported that they had tried drugs was similar to that which had been found in a recent study of the general Indonesian population (National Narcotics Board Indonesia, 2005), although this figure would suggest that lifetime prevalence may be on the rise, given that some of the non-using students in the current study may go on to use drugs in the future. The lifetime prevalence of illicit drugs was still much lower than that in developed countries like Australia and Canada. The proportion of Indonesian schoolchildren in the current study currently who had used illicit drugs (6.2%) in their lifetime is proportionately much smaller than the lifetime prevalence reported in Canadian schoolchildren in Grades 7 to 12 (28.7%) (Adlaf & Paglia-Boak, 2005) and Australian youth aged 16 to 24 (50%). However, the figures in Canada and Australia represent a decline in lifetime prevalence over recent years, while the findings suggest that the opposite may be occurring in Indonesia.

Although it was the most commonly reported illicit drug used in the current study, the use of cannabis was relatively uncommon across the whole sample, with 3.2% reporting that the most recent drug they used was cannabis. Cannabis was reported to be a much more commonly used drug in the Canadian study of a comparative age cohort (Adlaf & Paglia-Boak, 2005), with 26.5% of students reporting cannabis use in the past year. However, in Canadian youth, with the exception of cocaine, the prevalence of all drug use, including cannabis, has been declining since 1999 (Adlaf & Paglia-Boak, 2005). In Australian youth, the prevalence of drug use, especially cannabis, ecstasy, and amphetamines, has also been declining since 1999 (Premier's Drug Prevention Council, 2005).

The proportion of schoolchildren in the current study who had last used cannabis (3.2%) was, however, 2 ½ times higher than annual reported prevalence across the wider Indonesian population, aged 15 to 64, in 2003 (1.3%) (United Nations Office on Drugs and Crime, 2006), supporting claims that cannabis use is on the rise in the country, particularly amongst young people. Similarly, the current prevalence of crystal methamphetamine in this study (1.4%) was greater than reported prevalence across the wider Indonesian population, aged 15 to 64, in 2004 (0.6%), (United Nations Office on Drugs and Crime, 2006), again supporting claims that ATS use is on the rise amongst young people. A similar pattern was observed in relation to heroin use, with 0.5% of the current sample last using heroin, compared to 0.2% reported annual prevalence of opiate abuse in 15 to 64 year old Indonesians in 2002 (United Nations Office on Drugs and Crime, 2006). The only drug that was demonstrated to have a lower prevalence in the current study (0.4%) than in the wider population (0.6% in 2004) was ecstasy (United Nations Office on Drugs and Crime, 2006), perhaps indicating that this is a drug preferred (or more easily afforded or accessed) by an older age group.

Prevalence of licit drug use

The prevalence of cigarette smoking, at 12.1% of students, was not very dissimilar from a study of similarly aged Canadian students, where 14% of students reported smoking cigarettes in the past year (Adlaf & Paglia-Boak, 2005). An Australian study of found a roughly similar prevalence, with 7% of 12 to 15 year olds and 17% of 16 to 18 year olds reporting being current smokers (White & Hayman, 2006a). Another Australian study found that 9.7% of 12 to 19 year olds were current smokers (Australian Institute of Health & Welfare, 2004). However, the contrasts between Indonesia and Australia and Canada are much greater when it comes to alcohol. In the Canadian study, 62% of students in Grades 7 to 12, reported drinking alcohol in the past year, compared to only 10% of Indonesian students in the current study. An Australian study found that 95% of 16 to 17 year olds had ever tried alcohol and 47% were current drinkers (White & Hayman, 2006b). This most likely reflects differences between the cultural and religious influences on acceptability of drinking alcohol of the three countries. Within Indonesia, where the majority of the population is Muslim, alcohol is viewed quite differently to the way it is viewed in Canada and Australia.

Age-related patterns

The median age of first illicit drug use in the current study was 14 years, which is comparatively younger than that found in similar cohorts in Canada (...years) (Adlaf & Paglia-Boak, 2005) and Australia (cannabis 15.5 years; ecstasy 17.4 years). The average age of starting smoking was 12.91 years in the current study, and the average age of first drinking alcohol was 13.74 years. In Canada, the average age of starting smoking was comparatively older (13.5 years), while the average age of first drinking alcohol was comparatively younger (13.2 years) (Adlaf & Paglia-Boak, 2005).

Reasons for drug use

This study's finding that most of the students who had tried drugs had done so for the purpose of experimentation is consistent with previous research (e.g., which had identified links between the initiation of drug use and curiosity, wider availability and peer pressure (National Narcotics Board, 2003; UNODC, 2004).

Usual place of drug use

Most students in the current study who had used drugs reported that the usual place for their use was at a friend's house, with a substantial proportion also using at entertainment centres and in their own homes. This was similar to the finding in the Australian study of 16 to 24 year olds, which found that the most common place for using cannabis and heroin was a friend's house, whereas the most common place for using ecstasy and amphetamines were licensed premises (Premier's Drug Prevention Council, 2005).

Parental knowledge

The finding that only about 22% of students believed that their parents were aware of their illicit drug use was unsurprising since drug use is commonly a peer-related activity which would concern parents, and possibly invite punishment. It seems likely that most young people in this age group would prefer their parents did not know about their involvement in illegal drug activity. Similarly, the finding that only a third of parents were aware of students' current consumption of alcohol was unsurprising, given the level of cultural and religious acceptance of alcohol consumption in Indonesia and the age of the sample.

Summary and Applications

The current study provided an interesting snapshot of a reasonably large number of late-elementary and high-school children across six cities of varying sizes across Indonesia. With such a large population spread out across a vast and diverse archipelago, it is difficult to produce data which can be described as representative. However, the data collected for this study provides evidence that patterns of drug use amongst Indonesian youth are changing, and that drug use is becoming an increasingly complex and common problem. The indications are that different approaches may be needed for different parts of the country, even within urban settings. Although this study did not involve a rural sample, it is suspected that patterns would be quite different again in rural and regional areas. This study highlights the need for much more comprehensive and representative research which should probe further into poly-drug patterns and reasons for gender differences and cross-regional differences.

The findings with regard to the average age of drug-use initiation and the predominance of experimentation as the main reason for trying drugs certainly provides evidence that appropriately-targeted universal interventions, based in elementary school, are likely to be effective. The available evidence suggests that well-conducted prevention programs at the elementary school level may be one of the best investments for reducing harmful drug use. Furthermore, such programs are likely to impact on risk factors for a range of behavioural problems, and on protective factors by increasing bonding to teachers, parents and school, as well as by increasing pro-social and responsible behaviours (Loxley, Toumbourou & Stockwell, 2004).

The evaluation research has shown that community-based drug education and information programs have the potential to exacerbate problems, with school-based programs more likely to be effective. If young children can be educated about the potential harms associated with drug use, they are likely to be persuaded to approach drugs with more caution, but only if these programs also include training on building relationships and social-emotional skills. This is best done as part of the school curriculum. Some Australian evaluations of program effectiveness have found that programs that focus solely on drug knowledge, attitudes and values are of limited value. School-based drug education that provides information alone seems to be insufficient to change young people's intention to use drugs, or change drug use behaviour, although information still remains an important part of school-based interventions. Of course, attempts to transplant interventions which have been successful in one cultural context to another must be done with caution, and evaluations are important to measure adapted programs, to ensure the most appropriate and effective interventions are continued and developed (Loxley, Toumbourou & Stockwell, 2004).

References

- Australian Institute of Health & Welfare. (2004). *2004 National Drug Strategy Household Survey*. Canberra: AIHW.
- Centre for Harm Reduction & AHRN Country Office Indonesia. (2004). *HIV and drug use: Country situation Indonesia 2004*. Jakarta: CHR & AHRN Country Office Indonesia.
- CIA. (2007). *World Factbook*. Accessed at <https://www.cia.gov/cia/publications/factbook/print/id.html> on 27/02/07.
- Devaney, M. (2005). *Current drug issues in Southeast Asia and the Pacific: policy and practice (Key points from ANCD research)*. Paper presented at Illicit drugs and development international symposium (Critical issues for Asia and the Pacific). August 15-16, at Canberra, Australia.
- Devaney, M., Reid, G., & Baldwin, S. (2006). *Situational analysis of illicit drug issues and responses in the Asia-Pacific region*. Canberra: Australian National Council on Drugs.
- Irwanto, I. (2001). *Drug use epidemic in Indonesia: Some warning signs*. Paper presented at the 25th Anniversary meeting of the community epidemiology work group. June 12 – 15, at Rockville, Maryland, USA.

- Jalal, B., Abednego, H. M., Sadjimin, T., & Linnan, M. J. (1994). HIV and AIDS in Indonesia. *AIDS*, 8 (suppl. 2), S91-S94.
- Lorete, I. (2005). *Harm reduction advocacy to drug and law enforcement agencies in Indonesia*. Paper presented at Illicit drugs and development international symposium (Critical issues for Asia and the Pacific). August 15-16, at Canberra, Australia.
- Loxley, W., Toumbourou, J. W., & Stockwell, T. (2004). *The prevention of substance use, risk and harm in Australia: A review of the evidence*. Canberra: Australian Government department of Health and Ageing.
- National Narcotics Board. (2002). *Indonesian country report: 23rd meeting of the ASEAN senior officials on drug matters*. Kuala Lumpur: National Narcotics Board.
- National Narcotics Board. (2003). *Strategic concept to combat the drug menace in pursuit of a drug free Indonesia – 2015*. Jakarta: National Narcotics Board.
- National Narcotics Board Indonesia. (2005). *Improving ATS data and information systems national report, October 2005*. Jakarta: BNN Research Development and Information Centre.
- Padmohoedjo, P. G. (2005). *National survey of illicit drug use and trafficking among household groups in Indonesia, 2005*. Jakarta: National Narcotics Board.
- Pisani, E. (2006). Estimating the number of drug injectors in Indonesia. *The International Journal of Drug Policy*, 17, 35-40.
- Pisani, E., Dadun, Sucahya, P., Kamil, O., & Jazan, S. (2003). Sexual behaviour among injecting drug users in three Indonesian cities carries high potential for HIV spread to noninjectors. *Journal of Acquired Immune Deficiency Syndromes*, 34 (4), 403-406.
- Pisani, E., Garnett, G., et al. (2003). Back to basics in HIV prevention: Focus on exposure. *British Medical Journal*, 326 (7403), 1384-1387.
- Premier's Drug Prevention Council. (2005). *Victorian Youth Alcohol and Drug Survey 2004*. Melbourne: Premier's Drug Prevention Council, Victorian Government Department of Human Services.
- Reid, G. (2001). The challenges and activities of responding to the drug using situation in Bali, Indonesia. *National AIDS Bulletin*, 14 (5), 28-30.
- Reid, G., & Costigan, G. (2002). *Revisiting 'The Hidden Epidemic': A situation assessment of drug use in Asia in the context of HIV/AIDS*. Fairfield, Victoria, Australia: The Centre for Harm Reduction, The Burnet Institute.
- Setiawan, I. M., Patten, J., Triadi, A., Yulianto, S., et al. (1999). Report on injecting drug use in Bali (Denpasar and Kuta): results of an interview survey. *International Journal of Drug Policy*, 10, 109-116.
- UNAIDS, UNICEF & WHO. (2004). *Epidemiological fact sheets on HIV/AIDS and STIs* (Update). Geneva: UNAIDS, UNICEF & WHO.
- United Nations Commission on Narcotic Drugs. (2000). *Reduction of illicit demand for drugs: World situation with regard to drug abuse*. Forty-third session of the Commission on Narcotic Drugs, United Nations Economic & Social Council, Vienna, 6-15th March, 2000.
- United Nations Office on Drugs and Crime. (2004). *Amphetamine-type stimulants in East Asia and the Pacific*. Bangkok: UNODC, Regional Centre for East Asia and the Pacific.
- United Nations Office on Drugs and Crime. (2006). *2006 World Drug Report. Volume 1: Analysis*. Vienna: United Nations.
- United Nations Office on Drugs and Crime Regional Centre for Asia and the Pacific. (2005).
- United Nations Office on Drugs and Crime Regional Centre for Asia and the Pacific. (2006). *Patterns and trends of amphetamine-type stimulants (ATS) and other drugs of abuse in East Asia and the Pacific 2005*. Bangkok: UNODC.
- White, V., & Hayman, J. (2006a). *Monograph 58: Australian secondary school students' use of alcohol in 2005*. Canberra: Drug Strategy Branch, Australian Government Department of Health and Ageing.
- White, V., & Hayman, J. (2006b). *Monograph 59: Smoking behaviours of Australian secondary students in 2005*. Canberra: Drug Strategy Branch, Australian Government Department of Health and Ageing.