



**Drugs and Blood-Borne Viruses: Knowledge and Risk-taking Behaviour
Among Detained Adolescents in New South Wales**

Jan Copeland.¹⁺; John Howard.²; Timothy Keogh.³; Seidler, K.³

¹ *National Drug and Alcohol Research Centre, University of New South Wales, Australia;* ² *Social Health Program, Macquarie University, New South Wales, Australia;* ³ *Collaborative Research Unit, New South Wales Department of Juvenile Justice, Australia*

Abstract

Adolescents involved in criminal activity have been found to have markedly higher rates of HIV risk-taking than their peers who are not incarcerated. This sample of 300 adolescents in detention in New South Wales in 1999 revealed high levels of substance use and HIV risk-taking behaviours compared with their school attending peers. More than a third of the sample had injected a drug and 29% used opioids at least weekly. The rates of sharing injecting equipment were twice that of injecting drug users in the Australian community. The participants were susceptible to initiation to injecting drug use and rapidly re-injected following initiation. The participants demonstrated a lack of knowledge about hepatitis B and C that had not improved over the four years between surveys. These findings indicate an urgent need to implement effective, skills-based interventions to reduce HIV and other blood-borne disease risk-taking behaviours among this high-risk group of adolescents.

Keywords: Adolescent; Juvenile Justice; Injecting Drug Use; HIV; HCV

INTRODUCTION

Drug use and blood-borne virus risk-taking behaviors are more common among young offenders than their peers in the community (Copeland, Howard, Keogh & Seidler (in press); Lynskey, White, Hill, Letcher et al., 1999). Their patterns of use also involve greater harm to themselves and the wider Australian community (Howard and Zibert, 1990; Hando, Howard and Zibert, 1997; Copeland, Howard and Fleischmann, 1998).

There has been a great deal of energy spent on educating young people about HIV prevention. A number of studies and health organisations have identified adolescents as a "high-risk" group for

HIV infection (Goldsmith, 1993). Adolescents involved in criminal activity have been found to be less aware of HIV risk-reduction behaviours and to report markedly higher rates of HIV risk-taking than their peers who are not incarcerated (DiClemente, Lanier, Horan and Lodico, 1991). The most significant source of HIV risk among adolescents in custody is related to injecting drug use (Barnard and McKeganey, 1990).

More recently, hepatitis, particularly hepatitis C (HCV) has been a public health concern associated with injecting drug use. Prevalence rates of HCV among Australian needle and syringe program attendees have been reported at one in two in 1997

⁺Address for correspondence: Dr. Jan Copeland, National Drug and Alcohol Research Centre, University of New South Wales, Sydney, New South Wales, Australia, 2052. Ph +61-02-9385-0333; Fax: +61-02-9385-0222; Email: j.copeland@unsw.edu.au.

(McDonald, Wodak, Dolan, van Beek, Cunningham and Kaldor, 2000). Among Australians entering prison who admit to injecting drug use the reported prevalence rates of HCV are even higher at 66% (Butler, Dolan, Ferguson, McGuinness, Brown and Robertson, 1997). A study of adolescents detained in Melbourne, Victoria found that 21% were HCV positive, all of whom were injecting drug users (IDU) (Ogilvie, Veit, Crofts and Thompson, 1999). Despite being the leading worldwide cause of liver disease (Pybus, Charleston, Gupta, Rambaut, Holmes and Harvey, 2001) there are low levels of knowledge concerning risk factors associated with infection in the Australian community (Watson, Crofts, Mitchell, Aitken, Hocking and Thompson, 1999). Knowledge of HCV among Australian High School Student's has also been found to be extremely poor (Lindsay, Smith and Rosenthal, 1999).

The few studies of blood-borne virus (BBV) risk-taking knowledge and behaviour among adolescents in custody have found high levels of licit and illicit drug use and high rates of sexual risk behaviours for blood-borne diseases (Canterbury, McGarvey, Sheldon-Keller, Waite, Reams and Koopman, 1995; Rolf, Nanda, Baldwin, Chandra and Thompson, 1990-1991). While international studies have focused more on sexual risk taking among adolescents in custody, Australian studies have also reported that more than third of adolescent injecting drug users in custody (IDU) had shared injecting equipment (Howard and Zibert, 1990; Hando, Howard and Zibert, 1997; Copeland, Howard and Fleischmann, 1998)

The current study is a replication of aspects of two previous Australian surveys of adolescents in detention designed to examine trends in knowledge, attitudes and behaviours towards drugs and blood borne viruses.

METHOD

Procedure

Participants were 300 adolescents in detention in New South Wales (NSW). The interviews were conducted by the four authors and a small number of additional trained interviewers in nine Juvenile Justice Centres between March and July 1999. The number and demographic profile of the survey participants was similar to the population of such centres in NSW at the time of the study.

This project received the required ethics approval from the University of New South Wales

Committee on Experimental Procedures Involving Human Subjects (CEPIHS). Participants signed an informed consent form approved by CEPIHS that explained the study and other relevant issues. The participants were volunteers and were not induced to participate with any monetary or other rewards. The refusal rate was less than 5% in any participating centre.

Measures

The structured Interview took approximately twenty minutes to complete and was conducted in private settings in the grounds of detention centres that included remand and maximum security as well as lower security centres.

The structured interview was based on previous surveys and examined the following domains:

- (1) Demographic characteristics: Gender, age, living arrangements prior to detention, ethnicity, sexual orientation and educational history;
- (2) Psycho-social and health: general health, depression and suicidal behaviours, legal history, family history of violence and substance use;
- (3) Drug and alcohol history: lifetime and current drug use, treatment need and help-seeking;
- (4) HIV risk-taking behaviour: knowledge and attitudes, the HIV risk-taking behaviour scale of the Opiate Treatment Index (HRBS) (Darke, Hall, Heather, Ward and Wodak, 1991)

There were a varying number of questions for each domain, and where appropriate, the question is reported in full in the results section. All of the behavioural questions related to the period immediately prior to detention.

Analyses

The analyses were primarily descriptive in nature and were performed using SPSS for Windows (Version 10.0). Means, and medians for highly skewed data, are reported for continuous data. Categorical variables are described in percentages. When comparisons were carried out, T-tests are used for comparisons between normally distributed continuous data.

RESULTS

Demographic Characteristics

The participants were primarily male (90.4%). The mean age of the subjects was 16 years and six months (SD .5, range 12 - 22 years). On average the males (16.5 years) were significantly older than the females (15.7 years) ($t[298] = 2.8, p < .005$). Seventy nine percent of the sample were born in Australia. Three ethnic groups were markedly over-represented compared to their proportion in the general population; Australian Aborigines and Torres Strait Islanders (33%), South-east Asian (4.3%) and Pacific Islanders (3%). For further details of their demographic characteristics see Copeland et al., (under review).

Patterns of Substance Use

In summary, the participants showed significantly higher levels of lifetime and regular use of alcohol and other drugs than their age-peers (Copeland et al., under review). More than half the sample (53%) used alcohol, and 83% used cannabis, at least weekly. In terms of direct BBV risk-taking behaviour 29% used opioids, 21% amphetamines and 14% used cocaine at least weekly.

Initiation to Injecting Drug Use

More than a third (36%) of the sample reported that they had injected a drug. When asked about their initiation to injecting 34% reported that they had seen someone else inject before they tried it, most commonly a friend (64%), followed by stranger (8%) and sibling (7%) with 2% reporting a parent. One in four first injected the same day (25%) and a further 10% within days of seeing someone else inject.

The majority (74%) reported that the decision to inject was unplanned. The most common place of first injection was at a friend's house (31%), in the street (26%), or their own home (15%). Under one half (46%) had consumed other drugs prior to their first injection, most commonly cannabis (68%) followed by alcohol and cannabis (13%). The majority (72.5%) were first injected by someone

else. Moving to regular injection was rapid with 15% injecting again the same day, 38% the next day, 14% after a couple of days and 8.3% within a week – only 5.5% never injected again. When asked why they decided to inject again it was overwhelmingly related to the pleasant drug effects e.g. “because of the way it felt” (41%), “loved it” (27%), “because of the rush” (6%). There were some idiosyncratic responses such as “to gain full effect of steroids” and four young people said it was because their friends were doing it.

Recent BBV Risk-taking Behaviour

Nearly a third (31.2%) reported having shared a needle in the month prior to detention with fifteen reporting having shared more than once. Cleaning needles with bleach was reported by 26% of the participants with 5% reporting no needle cleaning at all.

The majority (86.4%) of the participants in the study were sexually active. Around half (52%) of the participants reported using a condom the last time they had sex. The majority (68%) reported that this was with a regular partner, 31% a casual partner and 2% a client. Forty participants reported having been involved in commercial sex. Regarding their usual sexual behaviour, only a quarter (25%) reported using a condom every time with a regular partner, 22% with a casual partner and 86% with a paying partner. Similar figures apply to never use of condoms with 24% reporting they never used a condom with a regular partner, 16% with a casual partner and 10% with a paying partner.

HIV and Drug Use Knowledge and Attitudes

There have been very few changes in the knowledge and attitudes of young detainees over the four years between surveys. The vast majority of the sample remained aware that sharing needles was a route of HIV transmission and that condom use provides protection from HIV infection.

Table 1

Percentage of adolescents who correctly responded to items assessing knowledge and attitudes to BBV and substance use 1995 and 1999

Statement (correct response)	% Correct 1995	% Correct 1999
Sharing needles can spread HIV (agree (A))	98	96
Mosquitoes can spread HIV (disagree (D))	50	34
Sex without condoms can spread HIV (A)	96	93
Having sex without condoms is >HIV risky than needle sharing (D)	51	52
Cleaning needles with bleach can kill the HIV (D)	37	39

Hepatitis B/C can be spread the same way as HIV (A)	48	53
There are more drug users in Australia with HIV than HBC (D)	N/A	25
Drinking too much can harm your health (A)	91	87
Most people who use cannabis will eventually use heroin (D)	63	52
Heroin withdrawal can kill you (D)	33	34
Cannabis is not addictive (D)	N/A	69
You don't need to exercise for AAS to work (D)	N/A	50
Using alcohol and pills with heroin ↑ overdose risk (A)	N/A	75

There were, however, serious gaps in knowledge regarding HIV transmission among this high-risk group of adolescents. This survey revealed that now two thirds of the participants remain convinced that mosquitos could spread HIV. The levels of knowledge concerning hepatitis B and C and their modes of transmission remain poor with this sample of the young people completely unaware of hepatitis C when asked this question. The participants were still unsure of the value of cleaning needles with bleach to kill the HIV, with less than 40% still stating that bleach does reliably kill the virus (Shapshak, McCoy, Rivers, Chitwood, Mash, Weatherby, Inciardi, Shah and Brown, 1993). This group of adolescents were also unclear regarding hierarchies of risk-taking behaviour with around 50% still asserting that sex without condoms is more risky than sharing needles for contracting HIV.

Other drug related questions revealed that there were high levels of knowledge concerning heroin overdose with 75% aware of the risk of mixing opiates with alcohol and "pills". Information concerning opiate withdrawal, however, remains poor with only a third (34%) aware that it is not life threatening. Of the other drug classes, the majority of participants (87%) were aware that drinking too much alcohol can harm your health. More than two thirds (69%) were aware of the dependence potential of cannabis but nearly half (48%) erroneously believed in a direct relationship between cannabis use and initiation to heroin use.

Interestingly, a question of anabolic-androgenic steroids revealed higher levels of knowledge than some of the other drug classes with half aware that one needs to exercise to achieve the benefit of use.

DISCUSSION

This sample of adolescents in custody in New South Wales revealed high levels of substance use and HIV risk-taking behaviours compared with their school attending peers (Copeland et al., under review). These behavioural patterns place them at substantial risk of exposure to incurable viruses

with high personal and community costs in morbidity and mortality.

The pattern of at least weekly use of cannabis by more than eighty per cent of the sample and alcohol by more than half of the participants and associated disinhibition make them more vulnerable to higher risk behaviours such as injecting drug use and unprotected sex (Fergusson and Lynskey, 1996). With more than a third of the sample having injected a drug and 29% using heroin, 21% amphetamines and 14% cocaine at least weekly prior to detention this is an extremely high risk group for BBV transmission within detention and in the wider community.

The findings on initiation to injecting suggest a group that is highly susceptible to engaging in injecting drug use. A number of factors associated with their first injection suggest that these young people are also more likely to engage in the least safe injecting practices such as sharing of equipment and using poor injecting techniques that increase the risk of injury and contamination. These include a quarter injecting on the same day they first saw someone else inject; 74% reporting the decision was unplanned; 26% taking place in the street (3 in detention centres); and 46% having other drugs on board prior to the first injection. A further concern in addition to their willingness to try injection is the rapidity of their re-injecting behaviour with 15% injecting again the same day and a further 38% the next day. Only a very small percentage found the experience so aversive as to never have injected again. The findings that only a third of the sample were aware that heroin withdrawal is not life threatening did not appear to deter them from initiating opiate use but may reduce the likelihood of them attempting to reduce, or abstain from, use. The opportunistic nature of their first injecting experience suggests that early intervention programs in juvenile justice setting should incorporate well-rehearsed and culturally appropriate drug refusal skills.

Given these findings it is unsurprising that their rates of sharing needles are double that of the

general Australian IDU population (McDonald, Wodak, Dolan, van Beek, Cunningham and Kaldor, 2000). This finding is in the face of very high levels of reported knowledge among the participants that sharing needles can spread HIV. This is especially concerning given the high levels of cocaine and amphetamine use reported by this sample as these drugs are frequently associated with multiple injecting during a using episode. The even greater scepticism among the sample in the 1999 survey concerning the mosquito as a vector for HIV implies educational strategies must be highly credible and address issues which might seem to be irrelevant to a more sophisticated audience.

The participants injecting BBV risk-taking behaviour is compounded by the sexual risk-taking. With the vast majority of the sample sexually active they report being less likely to use condoms every time with a regular, compared with a casual, partner. This suggests that where sexual activity is less likely to be planned, as with a casual encounter, the use of condoms decreases as young people may not have well rehearsed plans for such activities e.g. always carrying condoms with them. It is also likely that many of these young people lack adequate verbal and non-verbal 'language' to negotiate sexual safety (Howard, 1993). The finding that one in ten never use a condom for commercial sex is concerning as this is a potential transmission risk to the non-IDU community.

Given the high seroprevalence rates of hepatitis C among injecting drug users, and the recommendation that prevention programs are most appropriately targeted at people in the early stages of their drug using careers (Bell, Batey, Farrell, Crewe, Cunningham and Byth, 1990; Hagan, Des Jarlais, Friedman, Purchase and Alter, 1995) the consistently low levels of awareness of HVB and HVC among the sample are of concern. The new question in the 1999 survey concerning overdose risk associated with polydrug use and opioids highlights the effectiveness of disseminating public health messages to high-risk groups. The majority of young people in the study were aware of the risk and this demonstrates that educational interventions that are seen as credible and used a mix of agency and peer-led educational strategies to inform IDU of such risks lead to changes in knowledge and attitudes.

While New South Wales is currently in the fortunate position of having a specialist alcohol and other drug counsellor in each juvenile justice centre, greater emphasis could be placed on the

systematic application of HIV and other blood-borne disease prevention strategies. Two recent studies in samples that were either totally (Magura, Kang and Shapiro, 1994) or predominantly male (St. Lawrence, Jefferson, Alleyne and Brasfield, 1995) have demonstrated that problem solving and skills training can significantly reduce sex related HIV risk-taking behaviours compared with standard HIV education. A community study of female adolescents at high, moderate and low risk exposure to HIV reported that among girls at very high risk for HIV infection, the interventions must focus on substance use issues, including their use during sexual activity and the potential effects on condom use (Millstein, Moscicki and Broering 1993).

Authors have commented on the importance of understanding the social context of women's drug use and sexual behaviour in the development of HIV intervention strategies (Barnard, 1993). These include the greater likelihood that girls will be in a sexual relationship with another IDU which promotes sharing of injecting equipment. The dominant male culture among injecting drug users also inhibits girls power to negotiate safe practices, particularly when she is very young and without social support. A study of women in treatment also suggests that women-only groups or individual sessions may be a more appropriate mode of intervention delivery than mixed-sex groups for many women when discussing sensitive topic areas (Copeland and Hall, 1992). It is an empirical question as how to best tailor information and learning environments to achieve optimal outcomes in HIV risk-taking behaviours for young women and men in the frequently fraught environment of a juvenile justice centre. In addition to gender sensitivity, HIV and other blood-borne disease prevention activities like all interventions, should be sensitive to the cultural and socio-economic realities of the lives of young people and their families. This may be assisted by the inclusion of the Aboriginal and Torres Strait Islander community and other ethnic health services in the development and implementation of interventions. In addition, the interventions should not be delivered without ensuring that issues of psychiatric co-morbidity and other health and educational concerns are also being addressed and that continuous and integrated services are available (Inciardi, 1996). It may be appropriate for juvenile justice centres to develop a participatory process involving young people in custody in the preparation of their intervention programs and health promotion materials to ensure a client-centred approach.

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