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**The relationship between drug use and crime among police detainees:**

**Does gender matter?**

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### Abstract

Research has shown a relationship between substance use and offending, but the nature of this relationship remains unclear, especially for women. To explore this, 867 female police detainees in New South Wales were interviewed to examine the temporal order of substance use and offending, correlates of substance use and offending, and relationships between social background, substance use and offending. Offences relating to substance use, such as possession, were excluded. Canonical correlations revealed a significant association between substance use and offending. Results of *t*-tests showed that substance use significantly preceded criminal offending. Younger, less educated women self-reported more heroin and cannabis dependency. Women who self-reported drug dependency had higher levels of offending than those who did not. These results are markedly different from patterns observed in most male offenders. We review the implications of these findings for crime prevention, rehabilitation and substance abuse treatment.

Key words: substance abuse, crime, female, police detainee

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Substance use is widely perceived as a factor contributing to participation in criminal activities (Bennett, Holloway, & Farrington, 2008; Chen, 2009a Johnson, 2004; Lanier, Pack, & Akers, 2010; Marcus-Mendoza, Sargent, & Ho, 2002; Nair, Schuler, Black, Kettinger, & Harrington, 2003). Yet studies of substance users and the relationship between substance use and offending have focused primarily on male offenders (Broom & Stevens, 1991; Willis & Rushforth, 2003). Whether female substance use is more closely related to offending than it is for men has been the topic of some scholarly debate (Ettorre, 2004; Willis & Rushforth, 2003) as research has uncovered gender differences in substance abuse and offending patterns. For example, female offenders are more likely than males to be incarcerated for non-violent crimes, such as drug offences, whereas male offenders are more likely to be incarcerated for violent crimes, such as assault (Australian Bureau of Statistics [ABS], 2002). In the past decade, the overall number of offences by women in New South Wales (NSW) rose, as did the number of crimes involving violence, although female involvement in crime was still significantly lower than that of men, and women were more likely to be charged with non-violent offences (Holmes, 2010). While the proportion of men and women reporting drug use in the month preceding their arrest was similar, female offenders were significantly more likely than male offenders to have used “stronger” substances such as heroin and amphetamines in this period (Forsythe & Adams, 2009; Martire & Larney, 2009). This finding suggested a distinctive and more robust relationship between drugs and crime for female than male offenders, however research to date has failed to provide a clear explanation of this relationship. The goal of this study was to examine the correlates of substance use and other criminal behaviours in a sample of female police detainees.

A strong association between substance use and suspected criminal activity is well-documented (Bennett et al., 2008; Johnson 2004; Lanier et al., 2010; Makkai & Payne, 2003; Mallicoat, 2007; McClellan, Farabee, & Crouch, 1997). Studies have revealed that substance

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use preceded crime committed by women, similar to male offenders (Li & Mackenzie, 2003; McClellan et al., 1997; Raskin White & Gorman, 2000). Furthermore, longitudinal studies showed that early onset of drug use was associated with earlier criminal involvement and higher levels of criminal activity (Brook, Whiteman, & Finch, 1992; Nurco, 1998). For example, in 2003, 80% of women and 72% of men arrested by police in Australia tested positive to at least one substance (Johnson, 2004). In the United Kingdom (UK) three quarters of female arrestees tested positive to at least one substance (Bennett, 2000), and in the United States (US) over half of all females arrested tested positive to at least one substance (US Department of Justice, 2003). These percentages were considerably higher than those reported by women in the general population, suggesting that women who are criminal suspects use more drugs than do other female populations (Johnson, 2004).

Much of the research has focussed on male detainees, with only a limited number of studies utilizing a mixed gender sample to examine sex differences in substance using and offending populations (Chen, 2009b; Danielson, et al., 2009; Johnson, 2006b; Nair et al., 2003; Theall, Elifson, Sterk, & Stewart, 2007; Thompson & Petrovic, 2009). The samples tested in these studies had a relatively low number of women compared to men, thus the results and subsequent interpretations of those studies may not be reliable. However, the gender differences that emerged underscored the importance of examining substance use and offending by women separately from substance use and offending by men. For example, women who used illicit substances and committed crimes were more likely to have experienced (a) higher levels of mental health problems, (b) higher levels of abuse, (c) greater economic hardship, and (d) more general life adversity than men, both before and after incarceration (Anderson et al., 2002; Chen 2009b; Danielson et al., 2009; Marquart, Brewer, Simon, & Morse, 2001; Staton, Leukefeld, & Webster, 2003; Willis & Rushforth, 2003).

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A growing body of research has examined female substance users and female offenders separately from their male counterparts (Joseph, 2006; Kruttschnitt, Gartner & Hussemann, 2008; Phillips, Nixon, Phillips, Pfefferbaum, & Broidy, 2000). In particular, samples of imprisoned women have been increasingly used to examine the link between substance use and offending in this population (Kim & Fendrich, 2002). For example, an increase in the proportion of incarcerated females in the UK was strongly associated with a higher proportion of drug offences, classified both as activities to finance substance use and those attracting drug-related charges (Joseph, 2006). In a Canadian comparison between 32 incarcerated females and matched non-incarcerated controls without prior convictions drawn from the Montreal community, significant differences emerged between the incarcerated and non-incarcerated women in both personality and substance abuse (Brunelle, Douglas, Pihl, & Stewart, 2009). . The former group reported using a higher number of different substances and were more likely to show signs of substance dependence. The findings suggested a fundamental psychological relationship between drug use and offending for this population, as drug dependence, impulsivity and sensation seeking were significant predictors of incarceration, with substance dependency emerging as a mediator of the relationship between sensation seeking and imprisonment.

Similar findings emerged in studies in Australia. In a sample of Australian female prisoners, high rates of major depression and substance dependence were reported (Denton, 1995). An Australia-wide survey of incarcerated women identified a number of factors predicting regular drug use prior to arrest (Johnson, 2006a). These predictors included: age, marital status, not having children, early exposure to drug problems among family members, and violent victimisation as an adult. The prevalence of substance abuse was indicated by the fact that 42% of female offenders in that study were under the influence of drugs at the time of the offence, over half of the women interviewed met the criteria for drug dependency, and

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half of the property offenders attributed their crimes to the need to obtain money to buy drugs.

A limitation of these studies, however, was the use of homogenous samples, requiring further validation of the findings to permit or ensure generalisability to other groups of women. Populations of police detainees and convicted offenders are not isomorphic due to the presumption of innocence applicable to all police arrestees. Police detainees are potentially more diverse and informative regarding the research question than imprisoned populations.

While there is a clearly established relationship between substance use and offending, much debate centers on whether this link is causal. Three explanatory models for the “drug-crime” relationship have been posited (Raskin White & Gorman, 2000) although these models do not take into account potential gender differences in pathways to crime or in the relationship between drug use and crime: (1) drug use leads to crime; (2) crime leads to drug use; and (3) drug use and crime are not causally related but are the result of a third factor. Some have argued that both crime and drug use are not causally related, but rather both are simply expressions of deviant behaviour (Weatherburn, 2001).

Most research on male offenders has demonstrated that criminal activity tends to precede substance use. For example, findings from one of the most influential studies of drugs and crime in Australia supported the perspective that offending commenced before substance use (Dobinson & Ward, 1985). Prisoners in New South Wales were interviewed with the aim of examining the extent to which property crime could be attributed to regular substance use. Responses to questions on the temporal sequence of substance use and offending revealed that 72% of heroin users reported a first-instance of property crime before first-time heroin use. In addition, offences such as shoplifting and theft of a motor vehicle preceded first-time heroin use. Unfortunately, the focus on male offenders, property crime,

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and heroin use has limited the applicability of the findings to female substance users and offenders. Results of that study of male offenders have been used to generalise about the relationship between substance use and crime in general (Weatherburn, 2001), reflecting the common tendency to overgeneralise findings from studies with male populations to all human populations. Overgeneralisation of data on male offenders may be explained in part by the fact that the vast majority of prisoners were men: only 7% of the incarcerated population in Australia in 2007 were women (Australian Institute of Criminology, 2009). This profile may be changing: recent trends indicated that the number of imprisoned women was increasing almost twice as fast as the number of imprisoned men, with increases of 60% versus 35% over the past decade, respectively (ABS, 2010). The proportion of sentenced men increased by 1% while the corresponding increase in sentenced women was 8% (ABS, 2010).

Intriguingly, the limited available research on female offenders suggested that the opposite temporal order between substance use and offending applied (McClellan et al., 1997; Chen, 2009a; Chen, 2009b; Johnson, 2006a; Loxley & Adams, 2009). For instance, a study of a mixed gender sample of incarcerated prisoners in Texas revealed that drug-related problems predicted violent and property crimes committed by both male and female offenders. However, when asked whether they started experimenting first with illegal substances or with other criminal activities (McClellan et al., 1997), the female inmates (72.2%) were significantly more likely than male inmates (62.9%) to report experimenting with drugs prior to engaging in other criminality. Moreover, women prisoners reported using drugs to alleviate psychological pain whereas their male counterparts reported more pleasure-seeking reasons (Langan & Pelissier, 2001).

Thus, general approaches to “addicted offenders” have been criticized for ignoring women’s criminogenic needs (Malloch & Loucks, 2007), and treatment priorities, including education, training and employability, relationships and emotional well-being (Pearce, 2007).



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A review of gender differences in antisocial life-course trajectories concluded that male and female offenders followed similar paths and engaged in similar antisocial behaviours but differed in terms of the quantity of antisocial behaviours and susceptibility to certain influences at different ages (Jordan, 2011). For example, boys were more readily influenced by their peers; girls were more vulnerable to family violence. Regarding criminogenic needs of female offenders, Hollin and Palmer (2006) noted that it was plausible that certain adverse events in the lives of women, such as abuse might cause personal problems, which in turn led women to substance abuse and then offending, perhaps to support the substance abuse. They concluded that further research on gender-specific pathways to crime was needed.

In an Australian study, two-thirds of all substance-using incarcerated women reported using illicit substances prior to their first offence (Johnson, 2006a). Because that sample consisted exclusively of incarcerated women, results may not generalise to all populations of female offenders and detainees. This limitation restricts the understanding of the association between drug use and crime by other female offenders, as incarcerated women tend to have more extreme criminal and substance use histories than do other groups of women (Johnson, 2006a).

### **Aims of the Present Study**

The present study built on research by Johnson (2006a) by using an exclusively female sample to examine the temporal order of substance use and offending and other correlates between substance use and offending in women who had been arrested by police and were confined in police custody. The study addressed the gaps in the existing research by using a large-scale, Australian sample that did not include sentenced female offenders. In addition, the use of a police detainee population allowed the investigation of a wider range of criminal activities and substance use, including both more and less severe forms of both.

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Specifically, three research questions were addressed: (1) What is the temporal order of substance use and offending among female police detainees? (2) What, if any, are the correlates of substance use and offending among female police detainees? (3) What are the relationships between social background, substance use and offending among female police detainees?

### **Method**

#### **Data Source**

This study used New South Wales data collected by the Drug Use Monitoring project in Australia (DUMA) from 1999 to 2005. DUMA is a national project that measures drug use among people who have recently been apprehended by police. Data collection is conducted on a quarterly basis and involves completion of a structured interview and, if agreed, urinalysis. On average, over 80% of the individuals approached agree to be interviewed and, of those, more than 70% provide urine specimens.

#### **Participants**

Participants were 867 female police detainees in Sydney, New South Wales. In Australian jurisdictions, police detainees are persons held in police custody or detention under a territory law or a law of the Commonwealth, a state or another Territory. Data from both adult and juvenile detainees were used in this study. Detainees excluded from the sampling frame included: (a) persons who had been held in custody for longer than 48 hours as any drugs these detainees may have taken prior to their arrest would be metabolised and therefore not show up on a urine test; (b) persons from non-English speaking backgrounds where no interpreter could be located; (c) persons who exhibited signs of potential violence or mental disorders sufficient to pose an appreciable risk to the interviewer or who were unfit for interview due to illness/medication/alcohol/drugs; and (d) persons deemed ineligible at

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the discretion of the custody sergeant or officer in charge (usually because they were regarded as violent or unpredictable).

### **Dependent and Independent Measures**

Dependent and independent measures were constructed from participants' responses to the DUMA questionnaire, which contained a total of 43 of which a number contained sub-items. The survey was categorized into four sections: (1) personal information; (2) substance use, including items on prescribed drugs, knowledge of drug market and methods of obtaining substances; (3) offending, including questions on perceived risk of activities, income related to drugs and crime, and weapon use and possession; and (4) gambling. Two additional questions addressed the urinalysis sample, and a third provided an overall impression of interviewee reliability.

#### **Personal information**

Demographic characteristics obtained included age, education level, marital status, employment status, current accommodation status, and number of dependents for whom each participant was responsible.

#### **Substance use**

For purposes of this study, substance use referred to uses of illicit substances such as (but not limited to) cannabis, cocaine, heroin, and amphetamines. Illicit substance use and possession (which are crimes by law) were not considered as offences relevant to this study, as their inclusion would inflate the drug-crime relationship (Raskin White & Gorman, 2000). Alcohol was not included as a topic of inquiry because prior research demonstrated that drug and alcohol use follow distinct patterns, supporting the decision to treat them as separate types of behaviour (Palmer, Jinks, & Hatcher, 2010; Nunes-Dinis & Weisner, 1997). The following substance use variables were encoded: type of drug used, age at first drug use, frequency of drug use, level of self-reported substance dependence and injecting drug use.

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Analyses were conducted to test for each of the ten classes of drugs, namely: cannabis, cocaine, heroin, illegal morphine/other opiates, street methadone, amphetamines, illegal benzodiazepines, ecstasy, hallucinogens, and inhalants. Illegal prescription or over-the-counter medications were those used for “any purpose other than that intended” by the prescriber and/or manufacturer. Urinalyses tested for participant use of five classes of drugs (amphetamines, benzodiazepines, cannabis, cocaine, heroin or opiates), or multiple drugs. Urinalysis results were used to determine which substances participants had in their systems at the time the urine sample was provided.

### **Offending**

Offending referred to illegal activities committed with intent, including both violent and property crimes. Information on past offending behaviour and current offence type was extracted from the dataset and included in analyses as offending measures. In addition, the following three variables served as measures to explore the link between substance use and offending: (a) methods for obtaining illicit substances; (2) whether participants used substances in order to commit crime or in the course of crime commission; and (3) participation in making money from drugs.

### **Correlates of substance use and offending**

Canonical correlation analyses were conducted to assess the relationship between substance use and offending. Canonical correlation analyses measure common variance between groups of variables to produce canonical weights, which provide an indication of shared variance independent of other variables, analogous to partial correlation coefficients. To determine the number of canonical functions to include for interpretation, the analysis focused on the level of statistical significance, the practical significance of the canonical correlation, and redundancy indices for each variate (Hair, Anderson, Tatham & Black, 1998).

## Results

### Participant demographics

The age of the women ranged from 11 to 65 years, with a mean of 26 years ( $SD = 10.04$ ). The majority of participants (72.8%,  $n = 520$ ) were single, divorced, separated or widowed; just over one quarter (27.2%,  $n = 236$ ) were in a relationship. Most of the women in the sample (56.7%) had no dependent children, and approximately one half (51%) lived in another person's house or apartment. Three-fifths of the interviewees (61%,  $n = 529$ ) were unemployed; one fifth (20.9%  $n = 181$ ) were employed on a full or part-time basis, and one fifth were disabled for work, engaged in full-time education, seasonally employed. Very few women had retired (0.3%,  $n = 3$ ). The majority (57.7%,  $n = 500$ ) of the women in the sample had a high school certificate; and approximately one third had some form of tertiary education.

### Age at first substance use and current substance use

Data were collected on the interviewees' age at first drug use and their reported substance use in the month preceding the interview (Table 1). Results revealed that cannabis, heroin, street methadone and illegal benzodiazepines had been used the most frequently in the previous month (mean days of use = 13, 5, 2.4 and 2.2, respectively).

INSERT TABLE 1 HERE

Data on the types of drugs used, self-reported drug dependency and injecting (Table 2) revealed that high percentages of participants had used a wide range of drugs (more than 50% had used half of the named drugs itemised in the survey). In comparison, self-reported dependency rates were lower: cannabis dependency (43.0%) and heroin dependency (27.6%) were the most frequently reported.

INSERT TABLE 2 HERE

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Urinalyses revealed that the majority of women (72.1%,  $n = 625$ ) tested positive to drugs .

### **Nature of index offences**

The index offence was the illegal activity with which the participant was charged at the time of detention. Approximately one third of the interviewees were arrested for shoplifting (34%,  $n = 295$ ), and this was also their most common prior offence (39.6%,  $n = 343$ ). Other offences were much less common, as shown in Table 3.

INSERT TABLE 3 HERE

### **Temporal order of substance use and offending**

Analyses were conducted to discern the temporal order of substance use and offending by comparing the age at first drug use and age at first arrest. For all drugs other than illegal morphine/other opiates, participants reported first time substance use at a significantly younger age than their age at the time of first arrest, as shown in Table 4.

INSERT TABLE 4 HERE

Next, canonical analyses were conducted to examine the nature of any correlates of substance use and offending among the female police detainees. Outcomes of these analyses showed a significant relationship between substance use and offending variables, as shown in Table 5.

INSERT TABLE 5 HERE

Table 5 displays correlation coefficients used in developing interpretations based on variables that contributed most to the overall relationship between substance use and offending. The most significant correlations were associated with heroin use, the use of drugs before committing crime, and involvement in the sale, manufacture or transportation of drugs.

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The canonical weights for substance use and offending are displayed in Table 6. Analyses by type of drug used revealed significant correlations for women who had tried heroin, who self-reported dependency on heroin, who had injected it in the past 12 months, as well as for women who had tried amphetamines at an early age. Significant correlations also emerged for women who used drugs prior to committing crime, were involved in the sale, manufacture, or transportation of drugs as well as for those who had a higher number of criminal charges in the past 12 months than did other participants.

INSERT TABLE 6 HERE

### **Relationships between social background, substance use and offending**

Finally, relationships between social background, substance use and offending among female police detainees were examined. Results of canonical analyses revealed a significant relationship between both social background and substance use, and social background and offending, respectively, as shown in Table 5.

Inspection of canonical weights for social background and substance abuse revealed that women who were very young, with no children and limited education were more likely to have tried and to self-report dependency on cannabis and heroin, but not to have tried ecstasy (see Table 7X). Older, more educated women used drugs before commencing their first crime. These women were older when first arrested and had fewer criminal charges in the past 12 months than did other participants. See Table 7.

INSERT TABLE 7 HERE

## **Discussion**

The relationship between substance use and offending was examined in a sample of female police detainees, with the aim of identifying the correlates of drug use and criminal activities, the temporal order of substance use and offending in this population and the relationship between substance use, offending and social background. In line with previous

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findings (Bennett, 2000; Johnson, 2004; Willis & Rushforth, 2003), more than 70% of the participants tested positive to at least one drug. Significant relationships between substance use, offending and social background emerged.

### **Temporal Order of Substance Use and Offending**

Participants in this study started using drugs at a significantly younger age than their age at the time of their first criminal offence. For all drugs covered in this study, except for illegal morphine/other opiates, drug use began at an earlier mean age than first arrest or initial contact with the criminal justice system, suggesting that drug use may have contributed to offending behaviour and could play a role in shaping criminal careers. This finding was consistent with literature positing that, for women, substance use precedes crime instead of the other way around, as has been purported to be the case for male offenders (Li & Mackenzie, 2003; McClellan et al., 1997; Raskin White & Gorman, 2000). Younger female offenders without children and with limited education self-reported dependency on cannabis and heroin. Older, more educated women were more likely to use drugs prior to committing a crime, were older when first arrested and had a fewer charges in the past 12 months than other participants. Early initiation into drug use appears to be a risk factor for subsequent criminal activity for women, and early onset of drug use may, therefore, contribute to the onset and continuation of offending (Johnson, 2004), a finding supported by longitudinal studies showing that early onset of drug use was associated with earlier criminal involvement and higher levels of criminal activity (Brook, et al., 1992; Nurco, 1998).

### **Social Background, Substance Use and Offending**

The average police detainee participating in this study was an unemployed, high-school educated, single woman with no children and a stable address. It was highly probable she had tried and was still using illegal substances, most likely cannabis. She was approximately 14 years of age at first drug use, and obtained her drug by sharing it with



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others. It was also likely that she had been arrested, both in the past and at the time of the interview, for shoplifting, and had started using drugs prior to her first arrest. This profile concurred with prior findings, confirming the strong relationship between substance use, offending and social background factors (Bennett et al., 2008; Danielson et al., 2009; Johnson, 2004; Lanier et al., 2010; Makarios, 2007).

### **Strengths and Limitations of the Study**

This study extended our knowledge of female suspect populations and their substance use by examining correlates of drug use and crime in a large Australian sample. As this study examined women detained by the police, the results are of value to law enforcement agencies that are a first point of contact with detainees.

The use of 27 different interviewers across multiple NSW police sites enhanced the external and ecological validity of the research. This study used a large sample and tested for polysubstance use by urine screens. The results of this study can, therefore, be extrapolated to a larger number of female illegal drug users and offenders. Due to ethical requirements, participants who were so intoxicated at the time of arrest that they were too ill or violent to be interviewed were excluded. This exclusion may have biased the sample.

Conclusions formed on the basis of self-reported data necessarily encompass a number of limitations. These included inaccuracies of memory, unwillingness to report sensitive or private experiences, reported substance dependence unverified by diagnostic criteria and, in the case of detained participants, biases stemming from anticipated benefits of complying with the research in order to gain early release or other privileges. To minimise these limitations, self-report data drug use was confirmed with urinalysis at every possible opportunity and participants were thoroughly briefed on the purpose and nature of the research. Longitudinal studies are needed to better understand the link between substance use and offending for women who use drugs and offend across the life course.

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Although this study used an exclusively female sample, and comparisons were not made with other female populations or male samples, comparative analyses do not necessarily yield an account of how members of those categories develop socially, particularly in regard to gender (Broom & Stevens, 1991). Moreover, the range of demographic information about this sample was limited. Additional research is needed with expanded demographic details to confirm whether the findings of this study are replicated in other samples of substance users and offenders, particularly non-incarcerated women, as research has shown distinct histories of criminal involvement and substance use in female drug court participants compared with female probationers (Tindall, Oser, Duvall, Leukefeld, & Webster, 2007). Comparable information from other populations, such as the general community, non-offending drug users and non-drug using offenders will indicate the extent to which these findings about female detainees were unique.

### **Implications for further research on drugs and crime**

Only relatively recently have studies on the relationship between drug use and crime investigated gender differences and acknowledged that while several commonalities exist in the risk, needs and responsivity of male and female offenders, such as education, family or peer environment (Andrews, Bonta, & Wormith, 2008), women also have distinctive gender-based needs that warrant attention (Hollin & Palmer, 2006). Women involved in crime are more likely to represent socially marginalised and disadvantaged groups, and to have significant mental health and drug dependency problems (Johnson, 2006b; Mental Health Coordinating Council, 2010). In particular, researchers have identified the extraordinary prevalence of child sexual abuse in the life histories of women who have used drugs and been involved in crime (Browne, Miller, & Maguin, 1999; Chen, 2009a; Lennings, Kenny, Howard, Arcuri, & Mackdacy, 2007; Taylor, 2008). For many of these women, drug use has

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a “numbing” therapeutic role (Chen, 2009c; Mental Health Coordinating Council, 2010) or is a means of coping.

These findings do not imply that substance abuse represents the sole cause of female criminal activity. Research increasingly recommends the importance of a life-course approach (Johnson, 2006b; Menard, Mihalic, & Huizinga, 2001; Sullivan & Hamilton, 2007), in which attention is paid to the progression from drug use and criminal behaviour in adolescence to adulthood, or to the progression from minor to more severe drug use, to discern causality (Johnson, 2006b).

The current study is part of a growing body of evidence suggesting that female offenders have distinctive drug use patterns (Malloch & Loucks, 2007). Women are more likely than men to view their illicit drug use as the reason for their involvement in criminal activity (Loxley & Adams, 2009; Johnson, 2004). As many psychological treatments hinge upon motivational commitment by an individual, the strength of this self-perception suggests a greater role for substance abuse treatment in rehabilitating female offenders (Johnson, 2006b).

### **Implications for Practice and Public Policy**

The results of this study have important implications for drug treatment providers, female drug users and offenders, crime prevention and policing. They indicate that treatment is needed for women in the criminal justice system to help reduce substance use as (1) high numbers of substance users are found within this population and (2) intervention may prevent or moderate negative and far-reaching outcomes associated with drug use. Moreover, treatments need to be geared towards reducing demand for illicit substances, and reducing risk-behaviours associated with substance use.

Greater understanding of the relationship between patterns of offending and substance use can aid the development of interventions and harm-minimisation strategies (Johnson,

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2006a) and increase the likelihood of rehabilitative success (Bennett et al., 2008; Thompson & Petrovic, 2009). Results of this study indicated that substance use and offending in women were related, but influenced by other factors such as age and education. Targeted treatment must therefore respond to both specific at-risk profiles within a given population, and the common factors in both substance use and offending at their early stages in order to have a preventive or moderating impact.

The finding in this study that substance use significantly preceded criminal activity for female offenders suggested that, for a large proportion of women, drug use was a factor in crime commission. Drug treatment programs should reflect gender-based differences accordingly and be targeted to the specific personal needs of women and their substance use patterns (Chen, 2009a; Chen, 2009b; Malloch & Loucks, 2007), including the provision of effective services designed specifically for women (Pearce, 2007), such as women-only therapy groups (Martire & Larney, 2009).

Policy makers, government departments and the non-government sector need to collaborate to ensure that interventions for female substance users and offenders address a wider range of issues. For example, child and family services and mental health services need to harmonise their work in conjunction with substance use and crime agencies to provide a multi-level treatment approach for women.

### **Conclusion**

Overall, the findings on substance use and offending for female police detainees revealed that substance use preceded crime for female offenders, and that other factors such as age and education influenced patterns of drug use and offending. Rehabilitation and substance abuse treatment programmes for women in the criminal justice system should be tailored to reflect the role of substance use as a precursor to criminal offending for female

offenders. Additional research is needed to confirm whether these findings will be replicated among other samples of female substance users and offenders.

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## DRUG USE AND CRIME

Table 1.

*Mean Age at First Substance Use and Mean Number of Days of Drug Use in Past Month  
(SD)(N = 867)*

Drug	Mean days of use in past 30 days (SD)	Mean age (years) at first use (SD)
Cannabis	13.0 (11.92)	14.4 (4.17)
Heroin	5.0 (11.08)	16.7 (3.79)
Street methadone	2.4 (2.46)	18.9 (3.20)
Benzodiazepines	2.2 (11.92)	15.9 (3.42)
Amphetamines	1.7 (1.03)	17.2 (3.77)
Cocaine	1.6 (5.86)	19.1 (4.12)
Illegal morphine	0.4 (0.92)	20.1 (3.70)
Ecstasy	0.3 (1.78)	17.1 (3.68)
Hallucinogens	0.02 (0.52)	15.3 (1.94)
Inhalants	0.01 (0.03)	14.0 (1.23)

## DRUG USE AND CRIME

Table 2.

*Percentage of police detainees reporting substance use, dependency, and injecting (N = 867).*

Drug	Tried (%)	Self-reported dependency (%)	Injected in past 12 months (%)
Cannabis	78.2	43.0	--
Benzodiazepines	69.1	8.2	3.1
Amphetamines	55.6	7.0	20.4
Heroin	52.1	27.6	33.2
Illegal morphine	50.0	0.3	4.0
Cocaine	47.1	5.0	18.0
Ecstasy	35.8	1.8	2.5
Hallucinogens	28.1	0.1	0.3
Street methadone	22.4	3.1	6.9
Inhalants	6.2	0.0	--

## DRUG USE AND CRIME

Table 3.

*Mean Percentage of Current and Past Offences by Offence Type*

Offence type	Current offence	Past offence
Theft from retail premises	34.0	39.6
Receiving/handling proceeds from crime	7.1	6.0
Non-aggravated assault	6.3	6.0
Breach of justice order	3.7	0.8
Possess illicit drug	2.9	4.7
Aggravated assault	2.7	0.1
Unlawful entry with intent/burglary/break and enter	2.7	5.0
Driving while license suspended/cancelled	2.7	4.5
Offences against justice procedures	2.6	0.8
Illegal use of motor vehicle	2.5	1.1
Exceeding the prescribed content of alcohol limit	2.4	0.3
Fraud	2.4	1.3
Breach of bail	1.7	0.2
Aggravated robbery	1.5	1.2
Deal or traffic in illicit drugs – non-commercial quantity	1.5	0.3
Prostitution	0.7	0.1

## DRUG USE AND CRIME

Table 4.

*Comparison of Age at First Drug Use and Age at First Arrest (N = 867).*

	Mean	SD	<i>t</i>	<i>p</i>	Tried ( <i>n</i> )
Cannabis	-5.49	8.65	-18.71	.00	678
Cocaine	-.85	9.07	-2.75	.01	408
Heroin	-3.24	8.74	-10.91	.00	452
Illegal morphine	.17	9.10	.55	.58	434
Street methadone	-1.06	8.82	-3.53	.00	194
Amphetamines	-2.62	8.73	-8.82	.00	482
Illegal benzos	-3.97	8.76	-13.35	.00	599
Ecstasy	-2.78	8.99	-9.10	.00	310
Hallucinogens	-4.64	8.41	-16.25	.00	244
Inhalants	-5.91	8.30	-20.98	.00	54

*Note.* Mean = difference between age at first drug use and age at first arrest.

## DRUG USE AND CRIME

Table 5.

*Canonical analyses of substance use and offending, social background and substance use, and social background and offending*

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Canonical Analysis	Canonical Function	Canonical correlation	Canonical R-square	F	<i>p</i>
Substance use and offending	1	.63	.74	2.81	.00
Social background and substance use	1	.60	.60	2.82	.00
Social background and offending	1	.43	.28	4.89	.00

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*Note:  $p < .01$*



## DRUG USE AND CRIME

Table 6.

*Canonical Weights for Substance Use and Offending*

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	Canonical Weights
<b>Independent variables</b>	
Used drugs before crime	.47
Sale/manufacture/transport drugs	.41
Number of charges in past 12 months	.33
<b>Dependent variables</b>	
Ever tried heroin	.73
Dependent on heroin	.47
Injected heroin in past 12 months	.24
Age at first amphetamines use	-.22

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## DRUG USE AND CRIME

Table 7.

*Canonical Weights for Social Background and Substance Use (N = 867)*

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	Canonical weights
<b>Independent variables</b>	
Ever tried ecstasy	-.76
Ever tried cannabis	.66
Dependent on cannabis	.60
Ever tried heroin	.37
Dependent on heroin	.31
<b>Dependent variables</b>	
Age	-.99
Number of dependent children	-.21
Education	-.13

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