

Patterns of cocaine and opioid co-use and polyroutes of administration among street-based cocaine users in Montréal, Canada

Problematic cocaine use is a major health concern in North America, where it plays a central role in the HIV and hepatitis C epidemics. The development of effective public health programs for cocaine users is complicated by the fact that those users often have complex patterns of drug use, especially regarding polysubstance use and multiple routes of administration. This study aims to identify subgroups of cocaine users based on their co-use of opioids and routes of administration.

Roy, É., Richer, I., Arruda, N., Vandermeersch, J., & Bruneau, J. (2013). Patterns of cocaine and opioid co-use and polyroutes of administration among street-based cocaine users in Montréal, Canada. *International Journal of Drug Policy*, 24, 142-149.

Background

A number of studies have demonstrated that cocaine injection is associated with erratic drug use practices and high risk of HIV and hepatitis C (HCV) transmission. Other studies have shown that polydrug use and multiple routes of administration also increase the risks of HIV and HCV transmission. Enhanced understanding of complex patterns of drug use among cocaine users is of paramount importance to better control HIV and hepatitis transmission. Unfortunately at this time, little is known about polydrug use and different routes of administration used by problematic cocaine users. This study attempts to address this shortcoming.

Objectives and Methodology

The main objective of this exploratory study was to identify distinct subgroups of cocaine users based on their co-use of opioids and routes of cocaine and opioid administration. It also endeavoured to determine if subgroups can be differentiated in terms of sociodemographic characteristics and risk behaviours. To do so, a cross-sectional epidemiological study was conducted. In all, 886 regular cocaine users—people who had used cocaine once a week or more in the past month—were recruited in low-threshold programs in downtown Montréal between June 2008 and October 2010. Data were collected using an interviewer-administered questionnaire. The main analysis included the following variables: having used various drugs and opioid medications for non-medical purposes; and routes of administration (injection, smoked, snorted and eaten or drunk). A second analysis focused on sociodemographic characteristics (age, sex, ethnic background, residential status); polydrug use (using three or more drugs, excluding heroin and prescription opioids); duration of cocaine use; and condom use with occasional or commercial sex partners. Latent class analysis and multinomial logistic regression were carried out respectively for these analyses.

Highlights

- Results showed that 52.4% of participants were co-users of cocaine and opioids.
- Latent class analyses identified five subgroups of cocaine users. The subgroups are defined in Table 1.
- Class 4 represents the largest subgroup of cocaine and opioid co-users.

Table 1. Classes of cocaine uses

Opioid use	Minimal		Low	High	
	Class 1 - CS Cocaine smokers	Class 2 - CSS Cocaine smokers/ sniffers	Class 3 - CI Cocaine injectors	Class 4 - COI Cocaine-opioid injectors	Class 5 - COP Cocaine-opioid polyroutes
Number of cases	161	201	207	277	40
Membership probability	0.183	0.218	0.231	0.291	0.077
Characteristics	- All smoke cocaine - Low probability of using opioids and of using other routes of administration	- Routes of cocaine administration are mostly smoking and snorting	- All inject cocaine - High probability of smoking cocaine - Moderate probability of injecting heroin	- All inject prescription opioids - High probability of injecting and smoking cocaine - High probability of injecting heroin.	- High probability of smoking cocaine and injecting cocaine, heroin and prescription opioids; - Moderate probability of snorting cocaine and using heroin by routes other than injection; - Highest probability of prescription opioid consumption by various routes of administration.



The final multinomial model revealed that, compared with the largest subgroup :

- CSs and CSSs were more likely to have unprotected sex with occasional and commercial partners; CSs and CSSs were also younger and showed the highest percentages of participants aged 24 and under (24.8% and 38.8%, respectively);
- CSSs and CIs were less likely to be homeless than COIs;
- CSs, CSSs and COPs were more likely to have at least one parent born outside Canada;
- CSs and CIs were less likely to be polydrug users while COPs were more likely to be polydrug users;
- CIs were more likely to have used cocaine for a longer period of time, even after controlling for age. Indeed, CIs had the longest average duration of cocaine use (22 years) while CSSs had the shortest (15 years).

Conclusion

This study demonstrates the importance of offering an array of interventions for problematic cocaine users. For example, promoting safe sexual behaviours is especially valid for people who smoke or snort cocaine (CSs and CSSs), while distributing sterile injection equipment specifically targets drug injectors (CIs, COIs and COPs). Moreover, innovative approaches for cocaine and opioid users should be developed. On one hand, in the absence of substitution therapy for cocaine users, behavioural and pharmacological approaches should be developed to alleviate craving. On the other hand, new harm reduction strategies are needed to counter the recent growing popularity of prescription opioids among users. For instance, sterile injection equipment currently distributed should be reassessed: it is not adapted to the constraints of capsule or tablet injection since neither type is meant for this route of administration.

More information

Leclerc, P., Roy, É., Morissette, C., Alary, M., Parent, R., & Blouin, K. (2014). *Surveillance des maladies infectieuses chez les utilisateurs de drogue par injection. Épidémiologie du VIH de 1995 à 2012. Épidémiologie du VHC de 2003 à 2010*. Québec, QC : Institut national de santé publique du Québec (INSPQ), Direction des risques biologiques et de la santé au travail.

Roy, É., Arruda, N., & Bourgeois, P. (2011). The growing popularity of prescription opioid injection in downtown Montréal: New challenges for harm reduction. *Substance Use & Misuse*, 46, 1142-1150.

Roy, É., Arruda, N., Vaillancourt, E., Boivin, J.-F., Morissette, C., Leclerc, P., Alary, M., & Bourgeois, P. (2012). Drug use patterns in the presence of crack in downtown Montréal. *Drug and Alcohol Review*, 31, 72-80.

Keywords

- / Cocaine users;
- / Cocaine and opioid co-use;
- / Street-involved;
- / Latent class analysis

Correspondence to

- / Élise Roy, MD, M.Sc.
- / Professor
- / Research Chair on Addiction, Université de Sherbrooke and Hôpital Charles-Le Moyne foundation
- / Programmes d'études et de recherche en toxicomanie
- / Université de Sherbrooke
- / Tel. : (450) 463-1835, extension 61823
- / Email : elise.roy@usherbrooke.ca