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Drug use patterns in the presence of crack in downtown Montréal

Roy E^{1,3}, Arruda N, Vaillancourt E¹, Boivin J-F², Morissette C³, Leclerc P³, Alary M⁴, and Bourgois P⁵

¹Université de Sherbrooke, Faculté de médecine et des sciences de la santé, Service de toxicomanie, Longueuil, Quebec, Canada

²McGill University, Faculté de médecine, Joint Departments of Epidemiology, Biostatistics, and Occupational Health, Montreal, Quebec, Canada

³Agence de la santé et des services sociaux de Montreal, Direction de santé publique, Infections transmissibles sexuellement ou par le sang, Vigie et protection, Montreal, Quebec, Canada

⁴Unité de recherche en santé des populations, Centre de recherche, Hôpital du St-Sacrement du CHA, Quebec, Quebec, Canada

⁵Richard Perry University, Anthropology & Family and Community Medicine, Philadelphia, PA, USA

Abstract

Introduction and Aims: A study was undertaken to verify reports of an increasing presence of crack in downtown Montréal, and to investigate the influence of crack availability on current drug use patterns among street-based cocaine users. Design and Methods: The study combined both qualitative and quantitative methods. These included long-term intensive participant-observation carried out by an ethnographer familiar with the field and a survey. The ethnographic component involved observations and unstructured interviews with 64 street-based cocaine users. Sampling was based on a combination of snowballing and purposeful recruitment methods. For the survey, structured interviews were conducted with a convenience sample of 387 cocaine users attending HIV/HCV prevention programs, downtown Montréal. Results: A gradual shift has occurred in the last ten years, with the crack street market overtaking the powder cocaine street market. Although the data pointed to an increase in crack smoking, 54.5% of survey participants both smoked and injected cocaine. Drug market forces were major contributing factors to the observed modes of cocaine consumption. While the study focused primarily on cocaine users, it became apparent from the ethnographic fieldwork that prescription opioids (POs) were very present on the streets. According to the survey, 52.7% of participants consumed opioids, essentially POs, with 88% of them injecting these drugs. Discussion and Conclusions: Despite the increased availability of crack, injection is still present among cocaine users due at least in part to the concurrent increasing popularity of POs.

Keywords

Crack/cocaine; mixed-methods studies; HIV risk behaviors; Hepatitis C risk behaviors; modes of drug consumption

Introduction

For decades, drug injection has played a major role in HIV and hepatitis C virus (HCV) epidemics. In Canada, annual prevalence and incidence rates as high as 20% and 3% for HIV and 60% and 25% for HCV are reported [1,2]; accessibility of powder cocaine (an easily injectable form of cocaine) on the Canadian drug market has been identified as a leading cause. While there are regional variations, cocaine powder is the most commonly injected drug in Canada, with approximately 77.5% of injection drug users (IDUs) reporting current cocaine injection [3]. Cocaine injection is recognized as an important risk factor for HIV and HCV infections because of erratic injection behaviors associated with it [4-9].

Around 2004, Montréal's community-based HIV/HCV programs informed public health authorities of increasing numbers of crack smokers in the downtown area. The programs were concerned about the impact of this new phenomenon on their services and wondered if it might reflect a large-scale shift from injection to inhalation among new and experienced cocaine users. Montréal's public health authorities then decided to examine surveillance data from the collaborative Québec HIV and HCV surveillance networks among IDUs (SurvIDU) [10]. Analyses showed that cocaine injection remained high among IDU participants between 1995 and 2004, with two-thirds reporting cocaine as the drug most often injected [2]. The proportion of IDUs reporting smoking crack in the same time period increased from 51.8% to 62.3% (p=0.001). Data for non-IDUs was not available at the time.

The reduction of injection drug use due to the arrival of pre-cooked ready-to-smoke cocaine on the drug market was documented in several regions of the world including New-York (USA), Porto Alegre (Brazil) and Amsterdam (Netherlands) [11-14]. An increase in crack smoking with a corresponding decrease in cocaine injection could result in a decline in HIV and HCV epidemics due to the reduced risk for parenteral virus transmission. While crack smoking is considered a risk factor for HCV and HIV, the risks of blood-borne pathogen transmission among drug users associated with the sharing of inhalation equipment are lower than those associated with the sharing of injection equipment [15].

The present study was carried out to verify reports of the increased presence of crack in the downtown drug scene in Montréal, and to investigate the influence of crack accessibility on current drug use patterns including polydrug use and modes of consumption.

Design and methods

The study design was based on theories and perspectives asserting that structural and environmental factors shape HIV (and HCV) risks and drug use patterns [11,16]. Among these factors, the drug market is recognized as a crucial component which can modulate the influence of individual and social factors on drug use behaviors [17-20]. In this perspective, the present study combined quantitative and qualitative methods [21-25] which allowed exploration of the complexities of risk management by drug addicts in the context of a changing drug-use environment [26,27]. The methodology included long-term intensive participant-observation carried out by an ethnographer familiar with the field and a survey.

Data collection

Data collection was carried out from November 2007 to June 2009. For the ethnographic component, participants using cocaine were recruited in the Montréal downtown area using the *snowball* technique [28]. Recruitment started in community-based organizations (CBOs). Thereafter, to obtain a wider sample and reduce the idiosyncratic effects of snowball selection biases, the ethnographer continued a more strategically selected purposeful recruitment on the street through opportunistic engagement with the acquaintances of his

initial contacts who reflected the wider distribution of profiles and patterns of street-based drug users.

Data collected included: (1) observational fieldnotes on drug users' behaviors in their natural street-based environment at all hours of the day and night; and (2) unstructured interviews about drug preferences, drug markets, risk-taking practices, income strategies, and interactions among users. To reduce distortion of data due to socially desirable responses, interviews were conducted in a conversational format as drug users were actively engaged in their routine activities of seeking, purchasing and using drugs. This classical anthropological strategy of participant-observation allowed a triangulation of responses to conversational prompts with *in vivo* observations [24]. Monetary compensation was not offered to participants because participant observation requires establishing long-term voluntary relationships of trust and friendship free from ulterior financial motivations. Data collected were transcribed in a way to ensure anonymity, by changing participants' names and those of specific locations.

For the survey, a convenience sample of 387 regular cocaine users was recruited by study interviewers through regular visits to downtown community-based HIV/HCV prevention programs. Participants were eligible if they: 1) had used cocaine at least once a week in the last month (regular user); 2) were 14 years of age or older; 3) spoke French or English; and 4) were able to provide informed consent. The survey assessed several topics including demographic characteristics and HIV and HCV risk behaviors. Questions about drug use patterns focused on types of drug used (lifetime and current), modes of consumption (lifetime and current) and main modes currently used (assessed by asking participants how many days per week they were injecting, smoking and snorting cocaine, and how many times a day, on average, did they use each mode). The whole questionnaire took on average 60 minutes to complete. Participants received a monetary stipend of 20\$ CDN for their participation. Ethical approval was provided by Le comité d'éthique de la recherche en santé chez l'humain du CHUS et de l'Université de Sherbrooke.

Analyses

Analyses of both data sets were carried out concurrently. For the survey, descriptive analyses of drug use patterns were carried out (means, medians and proportions). As for the ethnographic component, fieldnote and interview transcripts were coded to allow reorganization of the data according to pre-established general themes based on the study objectives. The reorganized data was reviewed to identify new themes and sub-themes to further refine the coding process. Finally, the general contents of the interviews and fieldnotes as a whole were collated to discern any convergences or divergences and provide a comprehensive summary of the data. To ensure analysis validity, interviews and fieldnotes were discussed among members of the research team to obtain a consensus regarding the identified themes [29]. A final step of the analysis consisted of examining similarities between the epidemiological and ethnographic results [27].

Results

Description of study samples

The ethnographic sample was composed of 64 individuals (18-60 years old). Most participants were male and they ranged in age from approximately 18 to 60. The majority was white, Canadian-born, and French speaking. Approximately a fifth were English-speaking Canadians and about a sixth were of Afro-Canadian or Caribbean Canadian decent. Almost everyone was homeless or survived in precarious housing status (illegal squats, rented rooms in cheap hotels or in slumlord apartments). Most participants were welfare

recipients and also had income-generating strategies dependent on the informal street economy (petty theft, panhandling, sex work, etc.).

Most survey participants were male, white, Canadian-born and French-speaking, and their mean age was 38.6 years (see Table 1). Only 37.2% reported their own house or apartment as their principal dwelling place during the previous month. Similarly to the ethnographic component, the sample was essentially comprised of cocaine smokers and/or injectors.

Crack smoking overtaking cocaine powder injection

During fieldwork, emaciated individuals smoking crack in glass pipes was a common sight in the downtown area and many more crack smoking episodes were observed compared to cocaine injections. This contrasts with the former visibility of public injection reported in the early and mid-1990s [5,30]. In fact, ethnographic data suggests that from the early 2000s, the crack scene superseded the traditional powder cocaine dominated scene in Montréal:

Kevin: Crack is much bigger than powder cocaine.

Nelson: Since when has crack become more popular than powder cocaine? *Kevin*: I would say around the early 2000s.

(January 2009)

It seems plausible that the growth of crack smoking is related to the increased accessibility of crack on the streets. Long-time users reported that, in the past, they had to "cook" cocaine powder into crack themselves when they wanted to smoke it as no ready-to-smoke crack was available in the downtown area:

Nelson: Was ready-to-smoke crack available 7 years ago?

Eric: When I started smoking crack, people cooked their rock. Me, I couldn't cook crack. It was one of my friends that cooked it for me.

(January 2008)

One should not presume from this that powder cocaine is no longer available in Montréal. Rather, selling strategies for powder cocaine have changed over time which can also have contributed to the increase of crack smoking. While powder cocaine used to be sold directly by dealers on street corners, it is now sold via telephone order. Users who want to inject powder cocaine require a good knowledge of the field and a sense of organization to obtain their drug of choice; they must comply with certain rules of sale:

Denis: Powder cocaine isn't sold on the streets no more. It is sold by telephone-order/delivery. Almost all of the powder cocaine dealers adopted this system because it is an "in and out" system So you see it's a lot less on the streets.

(March 2008)

Based on ethnographic data, powder cocaine dealers use a "telephone-order/delivery" system to sell their drugs. They deal solely with trusted buyers which limits their outings and unnecessary public exposure, thus reducing the risk of being arrested by the police. This contrasts with crack that can be bought freely in the streets:

Denis: When people come up to me and want to buy some crack there's no problem. If someone wants powder cocaine ... wait a minute ... I have to check through my little book and find the right code [telephone number], call, wait and meet up with the guy.

(March 2008)

Survey data confirms the importance of crack smoking. In total, 97.4% of survey participants had smoked crack during their lifetime and 85.5% had done so in the last month. Most were regular smokers, with 13.9% smoking one day per week, 33.5% 2 to 3 days per week, 16.0% 4 to 6 days per week and 21.8% every day. Only 14.8% smoked crack less than one day a week.

Choosing between smoking and injecting cocaine

According to the survey, 31.5% of participants smoked crack but did not inject powder cocaine while 13.2% injected powder but did not smoke crack. Crack smokers who did not inject can be divided into two groups of users: those who had never injected cocaine (44.3%) and injectors who had quit injecting cocaine (55.7%). In the first group, many users said they had never injected cocaine because of their fear of needles and of the negative heath effects of injection.

Lenny: Nowadays, more people... they do the crack, because they're afraid of syringes ... a lot of people die ... they get AIDS ... so a lot of people are afraid of this. But they're not afraid to smoke a piece of crack.

(May 2009)

Participants who had stopped injecting cocaine, often used the "effect rationale" to explain their mode of consumption; they had stopped because the effect was too intense:

Raymond: Now, I just smoke crack. Before, I injected, but I stopped.

Nelson: Is the "high" the same?

Raymond: Oh no! When you inject, the high is much more intense.

Nelson: Why did you stop?

Raymond: I got sick of the craziness. It was too intense for me. It got me too agitated.

(December 2007)

On the other hand, some participants preferred injecting to smoking; they considered injection to have a better cost-effectiveness ratio. Moreover, for long-time cocaine injectors, smoking did not provide the same "high" as injecting.

For some users, pragmatic considerations are involved. For example, one female sex worker started injecting powder cocaine and smoking crack in 2001 around the same time she began working as a street sex worker. For her, the effect of crack smoking was too short-lived. She preferred injecting cocaine because the high lasted longer, which meant she had more time to work. In 2004, she started dancing in strip clubs and working for escort agencies. She stopped injecting since she felt that it had consequences that were incompatible with her new line of work.

Nelson: You stopped injecting when you were dancing in strip clubs and working for escort agencies?

Maika: I had to. Dancing with blue arms doesn't work that well!!! And when I had clients, working with long sleeves didn't work that well either! The guys wanted me to take off my shirt. There were a few occasions where I didn't want to take off my shirt because there were marks on my arms. When you're doing "street" sex work it's not that bad because the clients know some girls inject.

(May 2008)

In 2006, she returned to street sex work. Without quitting crack smoking, she started injecting again.

Combining crack smoking and cocaine powder injection

Even though surveillance and ethnographic data point to an increase in crack smoking, powder cocaine injection has not disappeared. According to survey data, 67.7% of the participants had injected cocaine in the previous month. Of these, 99.2% injected the powder form and 12.6% injected the crack form (which requires the user to reconvert the substance by acidifying it into a soluble, injectable form). In fact, approximately 54.5% of participants reported having both smoked and injected cocaine in the previous month. Of those who reported that their main mode was injection (46.3%), 70.4% had also smoked crack cocaine. Of those who reported mainly smoking crack (51.2%), 40.4% had also injected cocaine.

The ethnographic data allowed a better understanding of the contexts surrounding alternation between crack smoking and powder injection. As mentioned earlier, the accessibility of a specific drug form can play an important role in the choice of the mode of consumption. As powder cocaine is harder to find than crack, some individuals would not hesitate to buy crack if they could not find powder cocaine. Drug quality was also mentioned as a factor influencing users' choices:

Nelson: I didn't know you smoked a lot of crack. I thought you only injected powder cocaine ...

Stéphane: I smoke crack if it's good. The batch of rock that I got was so good that I didn't feel the need to inject.

(July 2008)

Conversely, those who mainly smoked crack also injected powder cocaine on some occasions; their choice being mostly based on economic capital. While crack and powder cocaine may be the same price (\$20 CDN for a quarter of a gram), there is a major difference in the quantities in which they are sold in. The minimum powder cocaine dose sold is a quarter gram. On the other hand, some crack street dealers will sell pieces for as little as \$5 CDN. Since the ethnographic sample participants had limited economic capital, cocaine users could have been influenced by these "cheap" and small doses and buy crack instead of powder cocaine. However, the situation could change under certain circumstances. For instance, some participants were engaged in a popular income-generating strategy consisting of buying drugs for other users in exchange for compensation (payment in money or drugs). When a crack user bought powder cocaine for another user and got paid with a dose of powder cocaine, there was a good chance he would inject. Also, numerous cocaine users who primarily smoked crack would take advantage of a sudden influx of cash (e.g. welfare check at the beginning of the month) to buy large amounts of powder cocaine:

Lenny: If they have coke, they'll smash [inject] it. Check day when they have money, yes, they'll buy maybe 5 quarters and smash it. But generally speaking, if they have \$20, they don't go for the powder, they just buy the rock.

(May 2009)

Cocaine users who mainly smoked crack reported sometimes injecting it. Based on the survey, it is only 12.6% of participants who reported injecting it on certain occasions, for instance when the substance was of poor quality:

Ted put a rock in his stem and smoked it. Because the taste was so bad, he did not want to smoke it any more. He decided that he'd inject it...He took a sachet of vinegar, poked a little hole in it with the needle of his syringe, and poured a couple

of drops in his cooker to dissolve the rock. Ted plunged his needle in the cup and drew all the liquid. He immediately injected it into a vein in his left forearm.

(Fieldnotes, March 2009)

Logistic contexts may also determine utilization of one mode over the other for participants using both modes. Crack smoking seems to be more convenient; it is easier and faster than cocaine injection and it requires less complicated manoeuvres. This advantage seems to influence homeless cocaine users and those involved in the street economy:

Lenny: Like 90% of the time, I smoke.

Nelson: Is there a reason?

Lenny: ... it's more practical. It's easier to find the crack, and on the streets it's much better 'cause it's quick, you pull a little piece of crack, put it on a pipe ... If you want to do it in a needle, you have to go sit down, and find a cup and a syringe, and ... mix it up, put it in the syringe, then you have to find a vein and inject it, so it takes time, right? And plus when I'm selling the drug, I don't really want to leave, cause I'm going to lose the money ... it doesn't slow me down when I smoke crack, you know?

(May 2009)

Smoking crack and injecting prescription opioids

Ethnographic fieldwork revealed that prescription opioids (POs) were highly present on the streets of downtown Montréal. These opioids (especially Hydromorphone Hydrochloride in the form of tablets and controlled release capsules) may have become a cheap alternative to heroin as they are readily available and inexpensive. In fact, it seems that POs are to heroin what crack cocaine is to powder cocaine. Like crack, POs can be bought directly on the street. To buy heroin, one has to have contacts and be willing to walk a certain distance to meet up with a dealer (as with cocaine powder). The user who does not have a contact will have to pay a commission to a person who has one. Also, like crack, users can buy a dose for as little as \$5 CDN. The lowest heroin dose costs \$20 CDN for half a "point" (0.05 gram). In addition to being inexpensive and available, POs have the advantage of being uniform in terms of quality, allowing users to better manage and control their consumption. These three characteristics make POs more and more popular.

As shown in Table 2, more than half of participants had consumed opiates, including POs, during the month prior to interview. Interestingly, 42.4% of users whose main mode of cocaine consumption was smoking reported having consumed opiates, with one third having injected them. For participants who smoked cocaine without injecting it, the proportions were 30.3% and 16.4%. The majority of participants who consumed opiates (prescription or otherwise) injected it (88.2%), even those who primarily smoked their cocaine (76.2%).

Wishing to test the idea that injecting continues among drug users in downtown Montréal, and verify its possible relation to the PO phenomenon, the ethnographer had this exchange with a participant:

Nelson: Why do you think people continue to inject even if there's crack?

Nick: I think it's cause of the dilau. People get hooked up really easy on that shit and it's just 5 bucks! I smoke crack and then smoke some more crack and then I say to myself "Hey, I'm a junkie. I got to shoot up!!!"

(February 2008)

Somewhat unexpected was the high PO injection frequency observed. Probably due to differences in pharmacological properties, the number of PO injections per day can be much higher than is usually seen among heroin users. The ethnographer observed that some PO users can inject between six and eight doses per day. Moreover, due to the texture of some POs (especially hydromorphone capsules), one dose can generate as many as three or four injections:

Marianne crushed the small balls of hydromorphe with the plunger of her syringe. She added water, heated the cooker and crushed the mix once again. She put a clean cotton ball in the cooker and drew her first dose in her syringe. With the same syringe, she drew a second dose and injected it into the same arm. Once again, she plunged her syringe into the cooker now containing practically nothing besides a pasty, dense substance. She drew a third dose and injected it.

(Fieldnotes, September 2008)

The most commonly observed drug combination was the crack–PO. Both drugs are attractive because they are readily available and can be bought for a few dollars. Also, the complementarity of the drugs' pharmacological effects seems to play a role in the way users manage these effects. In fact, alternate use of both drugs has a stabilizing and/or counteractive effect. For individuals who smoke a lot of crack and consequently become agitated and/or paranoid, POs may act as a sedative. Conversely, crack can be used to counteract side effects of opiate consumption such as excessive "nodding" and lethargy. Moreover, according to some participants, the combined use of both drugs may serve to maximize the effect of one drug or the other. To feel the full potential of an "upper' drug like crack, some individuals would first take a "downer" drug (in our case POs), and viceversa:

Maika: You're always looking for the biggest gap between your current state and the one you'll have after you take the drug. So, if you're at +2 after your first puff wears off and you shoot up a dilau, "bam" you drop down to level -5. If you smoke a rock of crack after that "Pow!" you jump to level +5. That's big gap! That's what people are looking for.

(August 2008)

Discussion

This study confirms the increased presence of crack in the street drug market of downtown Montréal where a gradual shift has occurred in the last ten years, with the crack market overtaking the powder cocaine market. Moreover, the selling system for powder cocaine has changed, making it less readily accessible. As observed in New York City, Porto Alegre and Amsterdam [11-14] such changes in street drug market forces seem to have produced fluctuations in drug use patterns among street-based cocaine users in Montréal. Furthermore, as in other studies, an association was observed between the forms of drugs available on the market and the modes of consumption used [19,31,32]. Although crack is sometimes injected [17,33], most users normally smoke it, while the opposite is true for powder, which is most often snorted or injected. However, as shown in this study, these associations between forms and modes are not systematically confirmed, and variations are always possible.

Drug market forces are significant factors contributing to the observed modes of cocaine consumption. Personal preferences, living conditions, and economic and practical considerations are also important factors. These results are echoed in studies that show how

psychosocial factors interact with structural and micro-environmental forces to influence the choice of one mode of consumption over another [16,20].

One striking result is the high proportion of participants reporting concomitant use of several modes of consumption. This phenomenon, which is not rare among injection drug users in Canada [3], has never been described in a population of regular cocaine users. While many cocaine users both injected and smoked the drug, many participants also varied modes, depending on the type of drug used. It would appear that drug users may avoid or cease injecting one drug, while at the same time beginning or continuing to inject another. Although experimentation with a new mode may result in a shift away from another, this is not always the case. Modes of consumption sometimes simply accumulate and coexist. Additional studies are required to deepen our understanding of the factors and conditions that influence users' combination of various modes of consumption.

Non-medical use of POs was highly prevalent among study participants with 40.6% reporting currently doing it. This is consistent with the OPICAN study that showed that approximately 50% of Canadian street based opioid users have used crack in the last 30 days [34]. The complementarity of the pharmacological effects of both substances (cocaine and opioids) seems to be appreciated by users which, in turn, could explain the popularity of this combination [35-37]. The high proportion of study participants using POs who reported injecting them is somewhat surprising. Figures about injection of POs for non-medical purpose are not known in Canada. In a study of street-based PO users in New-York, only 4.4% said that they were currently injecting them [38].

These results are worrisome because they suggest that the increased street accessibility of POs could help maintain injection among cocaine users, despite the increase of smoking due to the presence of crack. Indeed, several cocaine injectors who switched to smoking crack continue to inject because of their PO consumption. The PO consumption of users who did not usually inject cocaine is particularly troublesome. In fact, PO use among street-based users could lead not only to the maintenance of injection among established IDUs, but also to the initiation to injection among never injectors. Future studies are needed to verify this hypothesis and to investigate the practices associated with this mode of consumption. Indeed, the high frequency of injection observed among PO injectors is troubling because of the important risk infections that it comprises [39-40].

Conclusions

Instead of a decrease in injection due to the arrival of crack, Montréal is witnessing a diversification of drug use in terms of both substances and modes of consumption. In fact, numerous participants reported alternating between smoking cocaine and injecting it. They may inject cocaine less often, but they have not stopped all together. Moreover, many users, although primarily cocaine smokers, frequently inject opioids. In light of these facts, it is imperative to maintain the development of interventions aimed at preventing initiation into drug injection. Though some innovative projects targeting vulnerable groups such as heroin users and street youth have been developed [41-43], their sustainability has not been secured.

The combined use of cocaine and opiates is particularly problematic. If some substitution treatments exist for opiate dependency, there is still little being offered to treat cocaine dependency. Consequently, it is crucial to reinforce and consolidate programs offering free consumption material to drug users. Furthermore, in a North-American context where PO use is growing [44-46], it is important to pursue research efforts (both quantitative and

qualitative) to better adapt prevention, intervention and harm reduction services and programs aimed at vulnerable groups.

Before concluding, it is important to mention that both methodological components have their limitations (socially desirable responses, selection biases and limited generalizibility). However, the use of a mixed method design compensates at least in part the weaknesses of each component which may provide a more comprehensive and realistic picture [26,27,47]. Whereas the quantitative method provided a unique portrait of cocaine use and also strengthened the generalizability of participant observation findings and explanations, the ethnographic method allowed an understanding of the contexts and environments in which cocaine users evolved in and an enlightened interpretation of quantitative data [26,47].

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 Table 1

 Baseline socio-demographic characteristics and cocaine use pattern

Socio-demographic characteristics	N	%			
Gender (male)	328	84.80			
Canadian born	371	95.90			
Mother tongue					
French	315	81.40			
English	54	14.00			
French and English	1	0.30			
Other	17	4.40			
Mean Age	38.6				
Principal dwelling place					
Private residence	144	37.2			
Street	139	35.9			
Others' house	50	12.9			
SRO [‡] /housing facilities 46		11.9			
Transient	7	1.8			
Others	1	0.3			
Cocaine use	N	%			
Mean age at first cocaine use	387	18.4 years			
Main drug used (last month)*	229	59.2			
Smoking and injecting **		54.5			
Smoking**	124	32.0			
Injecting **	51	13.2			
Snorting	1	0.3			
Frequency of cocaine use (last month)					
1 day / week	43	11.1			
2-3 days / week	128	33.1			
4-6 days / week	89	23.0			
everyday	127	32.8			

[‡]Single room occupancy

^{*} Other drugs: cannabis (19.4%). opiates (19.6%). others (2%)

^{**} With or without snorting

Table 2

Opiate use pattern

Opiate use (last month)	All (n=387)	Mainly smokers* (n=198)	Only smokers* (n=122)
Used opiates	52.70%	42.40%	30.30%
Used prescription opioids	40.60%	33.30%	20.50%
Injected opiates	46.50%	32.30%	16.40%
Injected prescription opioids	35.70%	26.80%	13.10%

^{*}With or without snorting