Crack users, sexual behavior and risk of HIV infection

Usuários de crack, comportamento sexual e risco de infecção pelo HIV

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Abstract

Objective: To compare a sample of injecting cocaine users and crack users, assessing sexual behavior, risk for infection by HIV and its seroprevalence. Method: 109 injecting cocaine users and 132 crack users were assessed, using the World Health Organization questionnaire from the expanded “Cross-Site Study of Behaviors and HIV Seroprevalence among Injecting Drug Users” and HIV serology. Data were assessed by Multiple Correspondences Analysis. Results: Crack users showed less time of drug consumption when compared to the injecting cocaine users. Despite this fact, they had higher rates of risky sexual activity, differences in poly-consumption of drugs, and higher rates of involvement in illegal issues. HIV seroprevalence among crack users, although lower than for injecting cocaine users (7% vs. 33%) is high when compared to the general population at the same age. Conclusions: Sexual behavior of crack users in the studied sample may be considered a risk factor for HIV infection. Crack users have access to information on HIV/AIDS, but do not make use of it to change risk behaviors that may expose them to HIV infection and dissemination. HIV seroprevalence among crack users (7%) is concerning, which makes it necessary to create preventive strategies for HIV infection and dissemination that are specifically directed toward this population.

Descriptors: HIV infections; Crack cocaine; Prevention; Substance-related disorders; Sexual behavior

Resumo

Objetivo: Comparar uma amostra de usuários de cocaína injetável e usuários de crack avaliando comportamento sexual, risco para contaminação pelo HIV e sua soroprevalência. Método: Avaliou-se 109 usuários de cocaína injetável e 132 usuários de crack, utilizando o questionário da Organização Mundial de Saúde para o “Estudo Multicêntrico de Comportamentos e Soroprevalência de HIV entre Usuários de Droga Injetável” ampliado e sorologia para o HIV. Os dados foram avaliados pela Análise de Correspondências Múltiplas. Resultados: Os usuários de crack apresentaram menor tempo gasto no consumo de drogas quando comparados com os usuários de cocaína injetável. Apesar disso, tiveram maiores taxas de atividade sexual de risco, diferenças no consumo de múltiplas drogas e maiores taxas de problemas com a justiça. A soroprevalência do HIV entre os usuários de crack, embora inferior aos usuários de cocaína injetável (7% x 33%), é elevada quando comparada à população geral nesta faixa etária. Conclusões: O comportamento sexual dos usuários de crack da amostra estudada pode ser considerado fator de risco para a contaminação pelo HIV. Os usuários de crack têm acesso à informações sobre HIV/AIDS, porém, não as utilizam para modificar comportamentos de risco que os expõem à possibilidade de contaminação e disseminação do HIV. A soroprevalência do HIV entre eles (7%) é um dado preocupante, o que torna necessário criar estratégias preventivas de contaminação e disseminação do HIV especificamente direcionadas a esta população.

Descritores: Infeções por HIV; Cocaína crack; Prevenção; Transtornos relacionados ao uso de substâncias; Comportamento sexual

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Introduction

The consumption of cocaine has been studied for decades due to its damages per se.\textsuperscript{1-3} More recently, since the 80's, it has been studied for the relationship between its consumption by injecting cocaine users (ICU) and the risk of contamination by HIV.\textsuperscript{4}

Studies carried out in the Bahamas, Canada, England and South Africa showed an increase in the prevalence of the use of cocaine in the form of crack.\textsuperscript{5,7} In Brazil, a study carried out in Santos with cocaine users, pointed out a growth in the consumption of crack from 11\% in 1991/92 to 67\% in 1999.\textsuperscript{8} In the city of São Paulo, 5.2\% of the cocaine users evaluated in 1986 reported the use of crack. This figure increased to 65\% in 1995/97.\textsuperscript{9}

Several studies\textsuperscript{5,10-13} have stressed the severity of the damages associated to the consumption of crack, such as the high taxes of risky sexual behavior (great number of partners, rare use of condoms, prostitution and exchange of sex for drugs). This places these crack users (CU) under potential risk of contamination and transmission of HIV. Besides the sexual risks, crack consumption has been associated with criminality and violence. A national study with CU carried out in two time periods (1998 and 1999) pointed out that after one year, 18.5\% of them had died (mortality rate of 24.9, considerably higher than the 3.3 in the general population). Out of these deaths, 56.5\% had occurred for violent causes and 30.4\% for complications of HIV or cytomegalovirus infections.\textsuperscript{14}

Still, we know very little about these groups, and up to the moment, there does not seem to be a special strategy that is suitably directed toward drug users that do not choose the injection path. Some studies\textsuperscript{15-17} have shown that prevention strategies among drug users have a higher impact on changing risk behavior related to drug use (such as sharing supplies) than on changing risk behaviors related to sexual practice. This suggests a gap that should be better explored in the attempt to enable expanded harm reduction for this population. This paper aims at pointing out the risk of HIV infection that CU are exposed to in our environment, comparing them to ICU.

Method

1. Subjects

The target population comprised 830 psychoactive substances users that had been followed up in four institutions for drug dependence treatment, located in the city of Campinas.* The inclusion criteria were: literate individuals $\geq$ 16 years old and use of injecting cocaine or crack over the last 12 months. 252 were selected (220 patients were hospitalized and 32 in outpatient treatment) and divided into two groups: Group ICU, (n = 109) and Group CU (n = 132). Eleven subjects were excluded because they had used both injecting cocaine and crack during the last twelve months.

2. Instruments

The instrument used for data collection was the standard questionnaire of the WHO/SAP (Substance Abuse Program of the World Health Organization) for the “Cross-Site Study of Behaviors and HIV Seroprevalence among Injecting Drug Users”\textsuperscript{18-20} already in use in many countries, including Brazil. It is divided into eight sections: information about the respondent; demographic characteristics; drug consumption; sharing supplies in drug use; sexual behavior; knowledge of AIDS and behavioral changes; travel background, and HIV testing. The questionnaire was expanded to add some questions that enable the inclusion of crack users, such as pipe sharing. In addition, we opened a question about behavioral changes after hearing about AIDS.

Serologic testing was performed with ELISA (Enzyme-linked Immunosorbent Assay), which has 99.6\% sensitivity and 99.2\% specificity, and confirmed with Western Blot.\textsuperscript{21}

3. Procedure

The questionnaire was individually applied by one of the two psychologists/interviewers that received 12-hour training. Interviews were privately conducted and were approximately fifty minutes long. After the interview blood samples were taken for the ELISA test.

The researcher communicated all serology results individually. At this occasion, there was counseling and guidance on HIV/AIDS. The study was approved by the Ethics Committee of the Immunological Control and Research Center Doctor Corsini, and all participants had access to the Informed Consent Form.

4. Data analysis

Data generated from the interviews were stored in a database program (DBASE). The Multiple Correspondences Analysis\textsuperscript{22} was used due to the possibility of assessing vast amounts of data resulting from the questionnaire. Patient groups were assessed according to demographic, sexual behavior, HIV seroprevalence and drug use variables. Variables were then described and turned into types. The objective of the analysis was to show which types are common or unique among cocaine users, associated to the fact these users are CU or ICU. The generated data matrices were processed using SAS, version 6.02.

Results

The cocaine consumption path (CU or ICU) showed demographic differences between groups (Table 1). Most participants were inpatients (87.3\%). Compared to the outpatients group they were younger, had more problems with the justice and more frequently earned money illegally.

Table 2 shows longer cocaine consumption by ICU (9.5 years on average vs 3.6 years of CU) and differences in the poli-consumption of drugs. When we questioned interviewees about information on HIV transmission, 100\% referred knowing at least one form of transmission. However, only 49\% of the studied sample mentioned “having changed” their behavior after AIDS came up, suggesting a distance between getting information and behavioral change. There was no difference in behavioral change rates after hearing about AIDS in the two groups. However, there were differences in the reasons for changing behavior: “I didn’t care” (42.8\% of ICU and 34.8\% of CU). For CU, the strongest reason (40.9\%) was “I thought it wouldn’t happen to me”, a reason mentioned by 37.6\% of ICU. Finally, the reason chosen by 19.4\% of ICU and 24.1\% of CU was “lack of information”. CU had higher rates of unprotected sexual behavior (Table 3).

\* Instituto Souza Novaes and Fazenda Senhor Jesus for inpatients; Narcóticos Anônimos and the day-hospital of the Serviço de Saúde Dr. Cândido Ferreira, for outpatients.
HIV seroprevalence was different between the two groups. Among ICU, it was 33%, and among CU 11%. Nonetheless, we should note that 36% of CU already had some experience in injecting cocaine consumption in the past, which may justify part of the seroprevalence detected. Excluding the CU with a history of injecting cocaine use, seroprevalence drops to 7% (Table 4).

We found an estimative of seroprevalence relative risk of 3.11 from ICU over CU (95% confidence interval: 1.77-5.47).

The main limitation of the study was the low frequency of women, since the results obtained show almost a totality of men in the sample studied (98%). Such data reflects the reality of the city of Campinas in relation to treatment sites for chemical dependents, in that there is a predominance of services exclusively directed toward the male population. Study data, therefore, should not be extended to an extra-treatment reality. The level of education detected among subjects participating in the study is above the Brazilian population average. Nevertheless, such fact is justified because of a requirement of the research protocol which had illiteracy as an exclusion criterion. The individuals who had been admitted to treatment comprised a sub-group which had more criminal problems and this is a limitation that prevents findings to be generalized.

Some data collected deserve attention, such as the respondents’ main sources of income, particularly in two situations: the first was the considerable number of cocaine users who depended on their kin, considering their age. The second was the large number of users who were self-supported, basically with regular jobs, going against the stereotype that typically associates injecting cocaine and crack users to outcasts.

From the viewpoint of sexual behavior, we observed that most individuals had regular sexual activity, and that there was an overlap of steady and occasional partners, in addition to reported use of condoms in less than half of sexual intercourses. Such fact reinforces the potential drug risk, as a “bridge” for sexually transmitted diseases (STD) and the importance of prevention approaches that do not neglect sexual risk behaviors among cocaine users.

Poli-consumption proved to be relevant from the viewpoint of frequency and distinct among drugs of choice. Alcohol

### Table 1 - Demographic characteristics of injecting cocaine users (ICU) and crack users (CU)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Categories</th>
<th>ICU (n = 109)</th>
<th>%</th>
<th>CU (n = 132)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean age (standard deviation)</td>
<td></td>
<td>27.5 (7.1)</td>
<td></td>
<td>24.0* (6.1)</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>Up to junior high</td>
<td>62</td>
<td>57</td>
<td>79</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td>High school</td>
<td>38</td>
<td>35</td>
<td>45</td>
<td>34</td>
</tr>
<tr>
<td></td>
<td>Higher education</td>
<td>9</td>
<td>8</td>
<td>8</td>
<td>7</td>
</tr>
<tr>
<td>Marital status</td>
<td>Single</td>
<td>81</td>
<td>74</td>
<td>112</td>
<td>85</td>
</tr>
<tr>
<td></td>
<td>Others</td>
<td>28</td>
<td>26</td>
<td>20</td>
<td>15</td>
</tr>
<tr>
<td>Children</td>
<td>Yes</td>
<td>41</td>
<td>38</td>
<td>35</td>
<td>26</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>68</td>
<td>62</td>
<td>97</td>
<td>73</td>
</tr>
<tr>
<td>Sources of income</td>
<td>Regular employee</td>
<td>60</td>
<td>55</td>
<td>64</td>
<td>48</td>
</tr>
<tr>
<td></td>
<td>Income from relatives</td>
<td>35</td>
<td>32</td>
<td>47</td>
<td>36</td>
</tr>
<tr>
<td>Legal problems</td>
<td>Illegal income**</td>
<td>5</td>
<td>5</td>
<td>15</td>
<td>11</td>
</tr>
</tbody>
</table>

* p < 0.05
** Such as robbery and traffic

### Table 2 - Characteristics of drug consumption for Injecting Cocaine Users (ICU) and Crack Users (CU)

<table>
<thead>
<tr>
<th>Variable</th>
<th>ICU (n = 109)</th>
<th>%</th>
<th>CU (n = 132)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean age at onset of consumption (standard deviation)</td>
<td>18 (4.0)</td>
<td></td>
<td>19.5* (5.4)</td>
<td></td>
</tr>
<tr>
<td>Mean number of years of use (standard deviation)</td>
<td>9.5* (6.4)</td>
<td></td>
<td>3.6* (5.4)</td>
<td></td>
</tr>
<tr>
<td>Used cannabis in the past year</td>
<td>91</td>
<td>83</td>
<td>83</td>
<td>63</td>
</tr>
<tr>
<td>Used alcohol daily</td>
<td>67</td>
<td>61</td>
<td>104</td>
<td>79</td>
</tr>
<tr>
<td>Shared injectors</td>
<td>62</td>
<td>57</td>
<td>81</td>
<td>61</td>
</tr>
</tbody>
</table>

* p < 0.05

### Table 3 - Characteristics of sexual behavior among Injecting Cocaine Users (ICU) and Crack Users (CU)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Categories</th>
<th>ICU (n = 109)</th>
<th>%</th>
<th>CU (n = 132)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homosexual behavior in the past 5 years</td>
<td></td>
<td>40</td>
<td>37</td>
<td>56</td>
<td>42</td>
</tr>
<tr>
<td>Prostitution for getting drugs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Used condom</td>
<td></td>
<td>11</td>
<td>10</td>
<td>16</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>Client of opposite gender in the past 5 months</td>
<td>8</td>
<td>7</td>
<td>23</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>Client of same gender in the past 5 months</td>
<td>2</td>
<td>25</td>
<td>3</td>
<td>13</td>
</tr>
<tr>
<td>Changed behavior after hearing about AIDS</td>
<td></td>
<td>52</td>
<td>48</td>
<td>58</td>
<td>49</td>
</tr>
</tbody>
</table>
consumption was more frequently observed among older users, and cannabis consumption prevails among the youngest. Such data must be taken into account in prevention and treatment strategies.

In this study, the fact that more than half of users interviewed referred they did not change anything in their behavior after AIDS came up, not avoiding risks and alleging “I thought it would not happen to me” and “because I did not have the information” shows a need to reassess prevention strategies specifically directed to this group. Studies stressed the importance of acknowledging the risk as a trigger for changing health-related behavior.

When we compare ICU and CU subgroups, some points deserve attention. There is an apparent similarity in most of the characteristics of the two groups (education, marital status, and having children). Nevertheless, we can notice CU are 3 years younger on average (statistically significant difference) and have consumed crack one third of the time of injecting cocaine consumption of ICU. This makes all other similarities – including any legal issues, consumption of other PAS, and unprotected sexual behavior – object of concern. Such data corroborate clinical observation and research findings that crack consumption has even more severe and faster harms than those related to ICU.

Another point that deserves attention is the high percentage of CU who, despite the lower age and lesser time of drug consumption, live on fully illegal income (11%, against 5% in ICU). This is in agreement with one recent study carried out among CU in São Paulo city. Other relevant data found in the differences between ICU and CU, lie in the main reason appointed by each of the groups for not changing anything in their behavior after AIDS came up. The most frequent reason for ICU was “I didn’t care,” probably indicating drug consumption was a priority at the time. On the other hand, the main reason mentioned by CU was “I thought it would not happen to me.” If we consider current AIDS prevention campaigns in our country, it is understandable CU do not perceive themselves under the risk of infection.

HIV seroprevalence among the ICU in this study was 33%. Seroprevalence among CU in this study was new concerning data. In the CU sample seroprevalence was 11%; however, we cannot forget that 36% of them reported having injected cocaine in the past, although they identified themselves as crack users at the time of the study. Since HIV transmission in ICU is well established, we can presume that part of the seroprevalence found results from this fact. However, even if we exclude all CU with an ICU history, seroprevalence remains high (7%), which is considerably higher than the prevalence of the population at this age.

HIV seroprevalence varies according to the population studied. It was 2.7% among users of any psychoactive drug; 4.9% among cocaine users in São Paulo city (1997/98); 19.2% in an African study carried out with prisoners. Among prison agents. An American study found HIV seroprevalence of 20.1% among CU compared to 7.3% in control subjects. The high rates of seroprevalence among ICU and CU found in the present study indicate the need of rethinking strategies to prevent HIV infection and dissemination in these groups.

We can see that the HIV/AIDS preventive campaigns aimed at drug users mention almost exclusively risks related to the sharing of needles and syringes, forgetting the universe of non-injecting drug users that might be under other types of behavioral risk. As it was observed in the data obtained in this study. Intervention strategies addressed to specific groups of drug used have succeeded to reduce the risk of STD. A metaanalysis study of intervention strategies reported a 12.6% decrease of risky sexual behavior compared to control groups, especially when intervention focus on specific groups.

Access to and knowledge of crack users’ behaviors is very important, both because the consumption of this product has grown surprisingly in some Brazilian cities, and because some of their behaviors – particularly with regard to sexual activity – may point to a new guideline in the prevention of AIDS and other STD. This study shows the need of more in-depth information about crack users, aiming at enhancing prevention and treatment strategies for this population.

Conclusions

This study indicates that the sexual behavior of the crack users of the sample studied may be considered a risk factor for HIV infection. They have access to information on HIV/AIDS, but do not use it to change the risk behaviors that expose them to possible HIV infection and dissemination. The study also showed that HIV seroprevalence among CU (7%) is a concerning finding that makes it necessary for us to create strategies to prevent HIV infection and dissemination specifically aimed at this population.

References

11. de Souza CT, Diaz T, Sutmoller F, Bastos FL. The association of socioeconomic status and use of crack/cocaine with unprotected anal


18. GECO (Grupo de Estudio de Colaboración de la OMS) Estudio comparativo internacional sobre la prevalencia de VIH y el comportamiento de riesgo entre los consumidores de drogas por vía parenteral en 13 ciudades. Boletim do Estupefacientes. 1993;65(1).


