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CONTENTS

The effects of the liberalization of syringe sales on the behaviour of intravenous drug users in France

F. R. INGOLD and S. INGOLD
Institute for Epidemiological Research on Drug Dependence (IREP), Paris, France

ABSTRACT

A study to evaluate the effects of the liberalization of syringe sales in France, which was carried out in 1987 and 1988 in Paris and at Créteil, Maisons-Alfort, Metz, Bordeaux and Marseille by a research team of the Institute for Epidemiological Research on Drug Dependence (IREP) in Paris, included two samples of intravenous users of drugs, primarily heroin: a street sample of 157 persons and a sample of 123 persons undergoing treatment for drug addiction at in-patient facilities. The study, based on interviews, showed that the emergence of acquired immunodeficiency syndrome (AIDS) had brought about a radical change in the environment of intravenous drug users, of whom approximately 40 per cent were infected with the human immunodeficiency virus (HIV). Liberalized syringe sales had an obvious effect on the behaviour of intravenous drug users: approximately half of them did not share syringes and purchased them at pharmacies, while the rest continued sharing syringes in a variety of ways. The authors concluded that the decision to make syringes freely available for sale was not, by itself, sufficient to cope with the syringe-sharing problem and that, in addition, appropriate educational programmes, personalized and geared to each subject's special circumstances, needed to be provided.

Introduction

This article presents the results of an evaluation study of the effects of the liberalization of syringe sales on the behaviour of intravenous drug users in France. Data were obtained by means of an interview with intravenous drug users and observation of the street life-style of addicts. In addition, a survey of pharmacies was conducted to obtain relevant information on the sale of syringes to intravenous drug users. The study began in December 1987 and data were collected during the first quarter of 1988. It was financed by the French Department of Health and carried out by a research team[1] under the

[1]Consisting of the authors and five field investigators: Denis Bombardier (Metz), Françoise Kenzi (Paris), Chantal Landrain (Bordeaux), Mohamed Toussirt (Paris) and Claude Vaidis (Paris).

auspices of the Institute for Epidemiological Research on Drug Dependence (IREP) in Paris.

The observation of behavioural changes provides an idea of the possibilities for adaptation of intravenous users. The study attempts to identify and understand the behavioural patterns, attitudes and concepts of drug users. The life-style of drug users is taken as a coherent set of responses to a given environment. These responses can change with new conditions. The changes taking place in the context of the liberalization of syringe sales are the subject of this article.

Population studied

The study included two samples of intravenous drug users: a sample of 157 persons contacted in the street and a sample of 123 persons undergoing treatment for drug addiction at in-patient facilities.

Street sample

The street sample was made up of intravenous drug users contacted in Paris, the Parisian suburbs of Créteil and Maisons-Alfort and the cities of Metz, Bordeaux and Marseille. Those sites were selected because of their geographical distribution, differences in the size of their urban populations, and previously established contacts with investigators at each site.

According to the employed method of sample selection, known as "snowball sampling", each drug-addicted person interviewed was able to introduce the investigator to another drug-addicted person. In this way, a street sample of 157 intravenous drug users was established.

The sample included mainly heroin-addicted persons who, at the time of the study, regularly used a syringe for heroin injections. An attempt was made to ensure that the sample was as diverse as possible with respect to age, background and life-style. In Paris, for example, a small number of prostitutes and individuals from entertainment circles were included.

The subjects ranged from 18 to 37 years of age, the average age being 27. Thirty-three per cent of them were female and 67 per cent male. Eighty-nine per cent were of French nationality. Among the immigrants, the most frequent countries of origin were Algeria, Italy and Morocco.

The majority of the parents of the subjects were married. One third of the subjects were from broken families, had widowed fathers or mothers, or never knew their parents. Divorce or separation was a factor in 21 per cent of the cases.

Although all social strata were represented, the majority of the subjects came from the middle or disadvantaged strata of society. In one half of the cases, the subjects had a domicile of their own; 33 per cent lived with parents; and 17 per cent were vagrants. Most of the subjects (60 per cent) were single,

10 per cent were divorced or separated and 30 per cent lived in a stable relationship with another person. Twenty-six per cent of the subjects had one child or more.

Sixteen per cent of the subjects had finished primary school, 71 per cent secondary school and 13 per cent a higher level of education. Approximately 50 per cent of the cases had no vocational training. Approximately one third of the subjects were employed; these most often were unskilled labourers. Unemployment was frequent, as was disability, sickness and prostitution.

The substances most frequently used were heroin (99 per cent), followed by cannabis (52 per cent), cocaine (25 per cent), tranquillizers or barbiturates (20 per cent), codeine (18 per cent) and alcohol (6 per cent). Fifty-five per cent of the subjects used two or more substances. The longer drug users were addicted, the greater their chances of being multiple drug users. In the case of 65 per cent of the subjects, heroin use dated back to the period 1977-1982. More than one third of the subjects injected heroin several times a week. Cocaine was also most often taken by injection.

The intravenous users in the street sample were aware of the existence of the treatment network, but only 60 per cent of them had recourse to it.

Treatment for drug addiction, when it was sought, was most often provided at specialized institutions, general hospitals, out-patient clinics and psychiatric hospitals. Often subjects had been incarcerated more than once, and approximately half of them had been in correctional facilities.

Sample drawn from treatment institutions

The second sample consisted of 123 intravenous drug users undergoing treatment for drug addiction in hospitals and specialized treatment centres in Paris and its suburbs Val de Marne and Seine-et-Marne and at Bordeaux, Etretat, Marseille and Metz. It included heroin users, 68 per cent of whom were male and 32 per cent of whom were female. Like the subjects in the street sample, they showed a tendency towards multiple drug use (58 per cent). The average age was 25 years, slightly younger than that of the street sample. In 67 per cent of the cases, first drug use dated back to the period 1980-1985.

Most often, the subjects in the sample drawn from treatment institutions were more severely addicted and had a history of more frequent treatment for drug addiction. But a smaller proportion of them had spent time in prison (29 per cent) as compared with the subjects in the street sample (52 per cent).

Data collection

An interview with each subject in both samples was conducted according to a questionnaire designed to elicit information on age, sex, socio-cultural background, vocational status, drugs used and frequency of use, medical history, previous contact with law enforcement authorities and current practices in connection with the purchase and use of syringes and condoms.

History of injection

The first heroin experience

In general, heroin was first taken by sniffing and not by injection. As for injection, it was almost always performed by someone else; an initial drug experience through self-injection was quite exceptional. The first experience generally occurred in a group, with the other group members also using heroin, most often nasally. It was only later, with other persons, that the first injection usually took place.

The transition from nasal administration to injection, while it generally implied a change in the subject's usual companions and new contacts, was explained after the fact in terms of economic need: "When you sniff, you need more; when you shoot, you need less, if that's what you want." For the same quantity, the effect of injection was more intense and, when the increase in consumption had passed a certain threshold, injection became necessary in order to sustain the effects of the drug: "Sniffing didn't do anything for me anymore. I had to start shooting." This transition to injection, when it occurred, took place after variable periods of time, ranging from a few weeks to several years.

The first injection was usually performed by a close friend, occasionally the subject's companion. That person left behind a definite, usually fond, memory and inspired confidence or at least enjoyed a certain prestige. Even in the few cases in which self-injection was performed straight away, the first injection took place with partners. This "apprenticeship" was necessary; even if an understanding of the drug had been acquired by those who had first consumed heroin nasally, the problem of the technical handling of the syringe and needle remained. As one subject explained: "Because if no one has given you the first one, there's no way you'll know how to prepare a shot. It's not something you can guess . . . Finding a vein for the needle isn't all that obvious." Or as described by another subject who, after six months of nasal consumption, tried to inject himself: "It was a fiasco! An utter failure. I couldn't find the vein. What a mess! . . . The next day I had a friend of mine with me, and he's the one who gave me the fix."

Vomiting, discomfort and drowsiness contributed to a fairly disagreeable memory of the first heroin injection. Certain subjects said they were afraid, while others recalled that they did not have time to know what was going on. Several spoke of pleasure or enjoyment in connection with the first injection. While all continued to remember their first injection, it seemed that it was more the recollection of an ambiance and a context: "I have a pleasant memory of it, but not so much because of the fix, since I was sick, vomiting and all that . . . What gave me pleasure was the atmosphere, the people I was with. That's really what I liked."

Self-injection: a point of no return

The transition to self-injection marked a break between two periods of life. Self-injection introduced the subject to another practice, another form of

heroin use. The depictions of the transition included the notion of loss of companions, an ambiance described as happy, a sense of constraint and a feeling of regret. Frequently, the transition to self-injection occurred on the occasion of an absence or separation: "I had to do it and I did it. I resisted. I should never have done it." This emerged even more clearly in the testimony of females, in the context of a separation. Women were then forced into autonomy. On the other hand, it could have also been the moment when the subjects lost their status as aspirants to initiation: "It's a train of events. You have to take the next step . . . I didn't even dare look at the syringe. I said to myself: 'Go ahead . . . do it!'"

Self-injection was also linked to the first episode of deprivation. It brought the subject face to face with himself, his fatigue and his loneliness. Whatever the modalities of the transition or its underlying occasion, the tone of the remarks changed. From then on, they expressed sadness, even grief, and above all the idea that a point of no return had been passed.

The gesture: making a hole

In the discussions, the first injection was clearly distinguished from the preceding episodes of nasal consumption, if only because of the intensity of the effects felt with the puncturing of the skin. They were mutually exclusive: one either injected or one sniffed. It was no longer a question of the drug, even if, occasionally, the quality of the heroin was cited *a posteriori* in justification of one or the other of those practices. Regular injection implied a deeper commitment.

At that level, the gesture itself was distinct from the drug. In that sense, it might take on an existence of its own, which is what typically happens when drug addicts inject themselves with water. The gesture was studied and appreciated for itself. Skill and ineptitude were cited, and the former gave prestige to the one performing the gesture.

At that point, the account took on an epic dimension, bringing into play the body, part by part: the foot, the arm, the vein, the nerve or tendon, the blood.

From that point of view, infections and abscesses had nothing to do with sickness. The abscess was a visible and tangible lesion, the consequence of a maladroit shot. It was not a question of the cleanliness of the syringe, but rather of the fact that it might be unsuitable: a needle too big or too small that made the gesture difficult. Nevertheless, the pleasure experienced, however well-recognized it might be, was not without problems. It was precisely at that point that the idea of the abnormal, of vice, even of the pathological, arose: "I wanted to do it. I wanted to make a hole. I'm both ashamed and not ashamed to say it, because I think it's the same with all junkies."

Syringe-sharing

In the 1970s, syringe-sharing became routine practice. The scarcity of syringes, the gradual disappearance of initiation into the proper use of the

syringe, and the rapid rise in the number of new heroin addicts contributed to a rapid increase in syringe-sharing among heroin users. The syringe, which prior to then had never been routinely shared, ceased to be a personal, even intimate, object.

According to general opinion, it was difficult to obtain new syringes. The most usual practice was to buy a vaccine or serum, though that was expensive. Only the syringe was kept, and the vaccine or serum was thrown away. One of the difficulties addicts encountered was in repeating the initial purchase. Faced with pharmacists who were reluctant or who refused to sell, drug users developed strategies aimed at passing themselves off as handymen, diabetics and the like, though there was always the fear of being caught.

Another means of acquiring syringes was establishing a relationship with a nurse or some other hospital staff member. The glass syringes of the 1970s normally came from such sources. In a few cases, the staff members themselves used heroin. But with such an arrangement, the availability of the syringes lasted only as long as the relationship lasted. Others turned to stealing the syringes on their own from hospitals, dispensaries or even pharmacies. A third possibility was to obtain the syringes from the family pharmacy when an illness on the part of one of the parents required regular injections. One case was also cited of used syringes having been purchased from a diabetic.

Sharing was the rule. One syringe was enough for a group, making it possible for all members to inject themselves. It was only a means or a utensil and, since acquired immunodeficiency syndrome (AIDS) was not known, the possibility still existed for an addict to borrow one. A number of subjects did not remember the origin of the syringes they had used for their first heroin injection.

This state of affairs had specific repercussions for the injection practices employed. On the one hand, the syringes were often unsuitable: excessively large needles that left marks, needles that were too small and slipped on the skin, and the use of intramuscular or intradermal needles for intravenous injections. On the other hand, given the difficulty of obtaining syringes, it was necessary to make them last. By one means or another, needles were sharpened until they wore out. The most common sharpening method was to use the striking surface of a matchbox.

The use of unsuitable or worn syringes contributed to the deterioration of the physical condition of addicted persons. In addition to being scarce and expensive, syringes acquired an exchange value that enabled the person who had one to obtain a little heroin by lending it.

It seems that the situation began to change during the period 1983-1985, at about the time that rumours regarding the first cases of AIDS started circulating. At that time, the costs of the detection test were not yet reimbursed under social security, and it was a rare addict who knew whether or not he or she was infected with the human immunodeficiency virus (HIV). For reasons of an essentially economic nature, when the situation was particularly critical, the announcement was made that syringes would be released for unrestricted sale. This contributed greatly to the development of a sense of awareness, on the part of drug addicts, of the inherent dangers of syringe-sharing.

A number of subjects who had initiated their heroin use in 1980 reported that, from that time on, they had taken certain precautions to guard against hepatitis, such as rinsing, boiling or simply heating the needle: "I'd bring the water to a boil, put the syringe in for 10 minutes or so because, at that time, I was afraid of getting hepatitis . . . But it seems that 10 minutes isn't enough to destroy the hepatitis virus. Maybe that's why I got it in 1983."

The majority (52 per cent) of the subjects of the street sample reported that they only used syringes that they themselves had purchased and that they never shared them with others. This indicated clearly that they were fully aware of the risks of syringe-sharing. It appeared that that attitude had gradually taken hold since 1985, well before the liberalization of syringe sales.

In the other cases (48 per cent), the subjects claimed to have continued sharing syringes more or less frequently. Some of them bought syringes and shared them with others. The rest similarly purchased their own syringes, but also made use of syringes that they had not themselves obtained. This clearly indicated that knowledge and awareness of the risk of infection were not sufficient to alter the behavioural pattern. Some subjects did not purchase the syringes used; they ran the highest risk of becoming infected with (and of disseminating) the virus. The initial quantitative findings in the street sample clearly demonstrated that that population of illicit drug users could greatly benefit from specially designed programmes of prevention.

Among intravenous drug users undergoing treatment, 40 per cent bought their syringes and did not share them, whereas 60 per cent continued to share their syringes. Thus, they practised syringe-sharing to a greater degree than those interviewed in the street (48 per cent). This meant that behavioural modification was not *ipso facto* triggered by recourse to treatment. Also, the youngest subjects seemed to have the greatest difficulty in adjusting to new requirements for reducing the risk of infection. While drug use among the younger subjects was less regular, syringe-sharing was far more frequent.

One-time syringe use in the street sample was reported by only 31 per cent of the cases. It was not exceptional for a syringe to be used 10 times by one or several subjects; on the average, however, one syringe was used four or five times. Similar results were obtained in the group of addicted persons undergoing treatment, where the risk was higher since syringe sterilization was by no means routine practice.

According to the general view, the liberalization of syringe sales has had a definite impact on the behaviour of intravenous drug users. The purchase of syringes at pharmacies has rapidly become an established custom. The sharing of syringes continues to exist, but on a more limited basis. The increased availability of syringes (and their low price) has been a factor in eliminating the habit of saving used syringes.

Often HIV-positive subjects lent their syringes only to other HIV-positive subjects or HIV-negative subjects lent theirs only to other HIV-negative subjects. This indicated that behavioural changes were in progress.

The urgent need for an injection, however, remained the dominating factor. The inability to find an open pharmacy or an acute state of deprivation

were situations of *force majeure* in which there was no question of taking time to obtain a new syringe. On the other hand, certain subjects had modified their behaviour even more radically:

"As far as my syringe is concerned, I take care of it, and how. I keep it in a little case or something like that, so that it's always clean. There's a guy who always comes to see me; he even has his name on his syringe. I put a piece of tape or a bit of paper on it; that way I'm sure that it's mine."

Moreover, among the subjects who claimed to have changed their behaviour, some spoke of the reduced frequency of their current consumption. The risk of AIDS and the availability of new syringes appears to be affecting the behaviour of heroin-addicted persons.

Abscesses, hepatitis and HIV

As expected, abscesses and hepatitis were very frequent and had affected 23 and 42 per cent, respectively, of the subjects interviewed. The proportions are probably underestimated, particularly with regard to hepatitis, which can occur undetected.

The majority of the subjects (76 per cent) had voluntarily undergone HIV testing. Among the 120 subjects in the street sample who had done so, 43 were HIV-positive and six had AIDS. That brought to 40 per cent the proportion of those who had volunteered for an examination and were carrying the virus or had AIDS.

The situation was similar for the subjects of the institutional sample. A background of abscesses (15 per cent) and of hepatitis (54 per cent) went hand in hand with a high frequency of positive HIV cases; of 102 subjects who had taken a detection test, two were full-blown AIDS cases and 45 were HIV-positive. That brought to 46 per cent the proportion of HIV-infected addicts among those who had undergone testing for HIV.

The above-mentioned differences in percentages should be interpreted with caution as they were calculated only among the subjects who had undergone testing for HIV.

Testing for HIV

The decision by the subjects to undergo a serological examination was taken in circumstances that were varied and that differed somewhat between the street and institutional samples. Most often (i.e. in the case of 40 per cent of the subjects in the street sample and 48 per cent of those in the institutional sample), the decision was taken in a hospital setting, usually by pregnant women. As for the street sample, a large number of the tests were carried out in correctional institutions, in the offices of general practitioners or under diverse circumstances such as blood donation centres, military hospitals and dispensaries. For those in the institutional sample, the tests were most frequently performed at traditional health-service facilities.

An analysis of the circumstances in which the tests were conducted showed that, on the whole, the subjects had sought medical advice for a reason other than that of the test itself (e.g. dental problem or physical illness). These consultations provided an opportunity for raising the question of drug addiction and led to the suggestion that a test should be carried out. In the case of females, often the opportunity presented itself during a pregnancy consultation.

AIDS

Health problems, such as hepatitis, abscesses and dental problems, are frequent among drug addicts, who only occasionally seek treatment from professional health-care services, usually at a very advanced stage.

The emergence of AIDS has had the effect of changing attitudes towards sickness and health. AIDS is regarded as a serious disease, certainly linked to the practice of injection, but not inherent in drug addiction. The new situation brought about by the appearance of AIDS and the change in practice regarding syringes has led to a heightened awareness of the disease.

Hepatitis was regarded by the subjects in the samples as an illness occasionally associated with AIDS or, at least, as a serious illness. Hepatitis was widespread among the addicts (41 and 54 per cent in the two samples), and certain subjects claimed to have always taken precautions against the disease. For the majority, however, such precautionary measures had been non-existent.

Attitudes of pharmacists concerning syringe sales

While the subjects in the two samples were being interviewed, information was collected from pharmacists on the modalities of syringe sales and any difficulties that had been experienced at the pharmacies. A total of 61 pharmacies participated in the survey. Most of the pharmacists were co-operative, though some (14 in number, mainly in Paris) were not.

At the 56 pharmacies that claimed to be selling syringes, the recorded frequency of sales varied from once or several times a day (50 per cent of the cases), several times a week (30 per cent), once a week or less (9 per cent) and once or twice a month (11 per cent). The frequency of sales was distinctly higher in the Paris area, where 65 per cent of the pharmacies visited were selling syringes at a sustained rate of one or several times a day. The pharmacies in districts of Paris known for their drug trafficking and prostitution sold a large number of syringes: figures of 100 a day were not unusual.

Generally speaking, pharmacists estimated sales to be stable or rising. Syringes were usually sold one at a time (87 per cent) and more rarely (13 per cent) in packages of 10.

Most often, syringe sales were not accompanied by the sale of other items, with the exception—in a few cases only—of medicines. Only 10 pharmacists reported selling condoms to their syringe clientele.

The actual liberalization of syringe sales had been accomplished fairly quickly.

Interviews with the pharmacists revealed that pharmacies, while selling syringes, encountered difficulties mainly with multiple drug users who asked for medicines containing psychoactive substances. It occurred, for the most part, at pharmacies that refused to sell syringes or that, for reasons of dissuasion, demanded a higher price than elsewhere or sold syringes only in packages of 10. Those seeking medicines containing psychoactive substances were heroin-addicted persons over 30 years of age, without roots in society and unable to break their habit. They were often vagrants and occasionally alcohol abusers.

The pharmacists often explained that multiple drug users showed aggressive behaviour mainly in response to a pharmacist's refusal to sell controlled substances without a prescription.

Robbery or shop-lifting were the difficulties cited by 20 per cent of the pharmacists. The pharmacists indicated that approximately one fifth of the syringe clientele showed behavioural problems in pharmacies.

It was generally observed that pharmacists and the syringe clientele had succeeded in adjusting to the delicate operation of liberalizing syringe sales. The pharmacists also indicated concern about their lack of information regarding the new situation and a desire to gain a better understanding of what was being done, in preventive terms, for drug-addicted persons.

Attitudes of intravenous drug users concerning syringe sales

The field investigators raised the question of the subjects' relationship with pharmacists. The aggregate of the responses indicated a certain parallelism between what was said about the pharmacists and what was said about the dealers, regardless of whether the two groups were positively or egatively perceived. The subjects were in a relationship of obligation *vis-à-vis* the dealers in order to obtain the heroin and *vis-à-vis* the pharmacists in order to obtain the syringes. Because of this, pharmacists and dealers exercised a certain amount of power over drug users, and nothing could be done against a dealer who cheated or a pharmacist who refused to sell a syringe. There were no problems when it came to going to the dealer or to the pharmacist, which was regarded as a business transaction. The exchange was brief and uncomplicated. If refused a syringe at one pharmacy, the subject would go to another pharmacy. When one dealer was out of drugs, the subject would look for another dealer. Occasionally, there was a more qualitative aspect of the relationship: "He knew that I was taking drugs, but it wasn't any of his business. It concerned only me. I was always very polite to him, and he was very polite to me. You had a kind of two-way respect."

The relationship was particularly good when communication was established between the drug addict and the pharmacist, whether male or female: "[She's] very polite . . . When you go to buy your syringe, you can discuss your problem. She's against it, she's sorry that you're on it, and that's it. . . ."

The relationship was poor, however, when the pharmacist refused to sell syringes or insisted on selling them only in packages of 10.

On the whole, women enjoyed better relationships with pharmacists than with dealers. For the most part, they began their heroin use in the company of a male friend or husband who assumed the responsibility of acquiring the drugs and the syringes. It was later, and often following a separation, that they found themselves faced with having to get their own heroin and syringes. They conducted themselves in a conciliatory manner with pharmacists.

The feelings that addicts had towards pharmacists were ambiguous, combining an element of attraction and rejection.

Purchase and use of condoms

The purchase of condoms was uncommon and remained, at best, an irregular practice. In the street sample, 25 per cent of the subjects had bought condoms, the purchase of which had been linked to the prevention of AIDS. The purchase of the first condom, however, had been quite recent—in 1987 and 1988 in the majority of cases. The purchase of condoms was slightly more frequent among drug-addicted persons who were undergoing treatment, but even then it remained a minority practice.

All of the interviewed heroin-addicted persons questioned were aware of the risks of sexually transmitted AIDS and knew that the use of condoms offered the only effective protection. Nevertheless, the use of condoms was still uncommon among this group. For the most part, the subjects made such use conditional on certain factors or regarded it as a later possibility.

The practice of HIV-negative subjects differed from that of HIV-positive subjects. The HIV-negative subjects were concerned about catching the virus and either avoided having addicts as sexual partners or were faithful to a single partner. They regarded the absence of relations outside the partnership as a sufficient precaution: "I live with a woman. I don't have to take any precautions. She's not on the stuff [heroin]. She doesn't mess around. She's clean. If there are any problems, it will be my fault. And, since I'm careful, I don't see why that should happen." As for the HIV-positive subjects, given the absence of systematic condom use, the problem was one of responsibility and guilt: "I'm afraid of getting involved with a woman who isn't on the stuff, because I'm HIV-positive. Well, I would take precautions, of course, but I'm afraid that if the whole thing went too far, if it got serious, I'd have to tell her I was positive. And then I'm not certain that she'd be willing to continue."

When the subjects were heroin addicts and HIV-positive, the use of condoms was no longer regarded as indispensable. The only precaution taken was that of a regular medical check-up. "My partner is also a healthy carrier. Actually, we don't take so many precautions because we don't give a damn. I mean, in my case, it's four years that I've been a healthy carrier and I've never had swollen lymph glands or fever."

Thus, while a few subjects claimed to make systematic use of condoms, on the whole, the precautions used were few, reflecting what was occurring in the general population.

Discussion and conclusion

It should be emphasized that it is difficult to evaluate behavioural patterns. In the present study, determining whether or not syringes were shared among drug-addicted persons by no means permitted a simple and direct approach. Actual practice involved a complex array of factors. There was no such thing as sharing or non-sharing in the absolute sense; the same person who initially claimed never to have shared a syringe might very well indicate at a later point that he or she had, on occasion, passed on his or her old syringe to a companion or that he or she regularly used a partner's equipment. The "never" might also be limited to certain conditions of space and time, such as at home and during the day.

Accordingly, particular attention was paid to the conditions under which questions were asked. It was possible to identify various factors that influenced sharing or non-sharing behaviour, such as the frequency of drug use, the methods of drug purchase, the purchase of the syringe and the attitudes the subjects might have regarding AIDS and the danger of becoming HIV-positive.

The effects of the liberalization of syringe sales

The results of the study clearly showed that the decision to make syringes freely available for sale definitely had an effect on addicts' behaviour: 52 per cent of the intravenous drug users in the street sample were not sharing syringes and were purchasing them at pharmacies.

The change in behaviour dated back to the period 1983-1985 and was distinctly reinforced by the liberalization of syringe sales. Nearly one half of the heroin users, however, were continuing to share their syringes in a variety of ways. The liberalization of syringe sales alone was not capable of inducing the majority of the subjects to change their behaviour.

What the liberalization measure lacked was an adequate educational programme for drug users. At a few specialized health-care centres, the personnel made sure that heroin addicts were provided with appropriate information, which was personalized and geared to the subjects' own special circumstances. But such initiatives reached only a minority of drug users.

The disposal of used syringes

All the subjects in both the street sample and the institutional sample were asked what they had done with their syringes after use. The replies obtained in the two samples were quite concordant. In 28 per cent of the cases, the addicts threw away their syringes in places from which they could no longer be retrieved (dustbins, sewers), after having destroyed them or wrapped them up. In 45 per cent of the cases, the addicts discarded the syringes in similar places without having taken any precautions. In 25 per cent of the cases, they discarded the syringes "anywhere". Occasionally (in 2 per cent of the cases), the syringes were kept or passed on to others.

The problem of the disposal of used syringes raised an inevitable question related to public health: Is it possible to increase the availability of syringes without running the risk of accidental infection because of the presence of discarded syringes in public places or homes?

The syringe exchange programmes that have been implemented in some countries may provide an answer, but it is too early to assess the effectiveness of these programmes. It seems that the programmes succeed in attracting a new and young clientele but do not hold them.

Infection with HIV

The proportion of intravenous drug users who had been infected with HIV was approximately 40 per cent on the average, but was subject to substantial variations from region to region.

Infection with HIV is certainly the result of syringe-sharing. The authors have attempted to identify other factors that might play a role in the transmission of HIV.

In respect of sex, HIV seropositivity was equally distributed among both males and females in the two samples.

How much the frequency of drug use had contributed to the extent of syringe-sharing is difficult to gauge, especially in retrospect. It might be expected that regular heroin users shared their syringes more often than occasional users. This was not the case. In fact, syringe-sharing was more frequent among the occasional users, especially among the youngest. Regular users, actively committed to their dependence, are organized and well informed, having seen for themselves the reality of the disease in the case of one or another of their friends. They make certain that they have their personal syringe available. For occasional users, on the other hand, drug consumption is not part of a routine. Frequently poorly informed, taking drugs when they have the opportunity, they are more apt to find themselves in a situation in which sharing is the order of the day.

Long-standing drug addicts who shared their syringes most often were at a higher risk of becoming infected with HIV than those who were addicted for shorter periods. Similarly, subjects who had a background of one or more instances of hepatitis were infected with HIV more often (60 per cent). Why were a certain proportion of long-standing heroin addicts with a severe degree of addiction not HIV-seropositive? It is believed that, when AIDS had not yet existed, they had limited their syringe-sharing to a few persons in their immediate circle in order to protect themselves against infectious diseases in general and hepatitis in particular. This fits well with the testimony of former heroin addicts for whom the management of dependence involved some degree of education regarding the method of drug use and a way of living with drugs.

Information on health, drug dependence and AIDS must be personalized and target-oriented, a point that, with regard to HIV infection, has been put to good use by the homosexual community. Information cannot be understood, accepted and assimilated unless a certain amount of preliminary work has been

carried out in order to adapt the message and the vehicle to convey it so that they best suit the target group. A proper perception of the risk of HIV infection is a necessary condition for a change of behaviour.

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