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SUSTAINED AIDS EDUCATION CAMPAIGNS  
AND BEHAVIOURAL CHANGES IN ITALIAN DRUG ABUSERS

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In the area of Padua, northern Italy, fear of AIDS along with AIDS educational campaigns had reduced risk behaviours for HIV among intravenous drug abusers (IVDA) as early as 1987, although at that time 38% of seropositive cases still shared needles and only 22% of subjects used condoms. The present study has been conducted in the same area and with similar criteria to evaluate the effectiveness and limits of a sustained education campaign. Drug related and sexual risk behaviours and motivations preventing behavioural changes were investigated by direct interview in 190 IVDA.

Fourteen percent of the participants, including 16% of the seropositive, were still sharing needles, mainly because they did not have works available at the time they were needed. Demographic features, drug-related characteristics and anti-HIV seroprevalence did not differ significantly between needlesharers and other drug abusers. Condom use was reported by 46% of subjects, but encouragingly enough this figure included 80% of the seropositives. While knowledge of seropositivity seemed to encourage condom use, a higher selectivity about partners and a negative attitude towards condoms were the most frequent motivations preventing safer sex. These results suggest that sustained AIDS education campaigns are being successful in maintaining and reinforcing the trend to risk reduction previously observed among drug abusers in this area. Nevertheless the persistence of risk behaviours in a consistent proportion of participants emphasizes the urgency of additional prevention strategies, such as syringe exchange or supply to the limited number of sharers and counselling to encourage safer sex.

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INTRODUCTION

Intravenous drug abusers (IVDA) represent the largest reservoir of infection with human immunodeficiency virus (HIV) in Italy and are one of the most likely vectors of HIV transmission to the general community through heterosexual contact and perinatal transmission (6, 8, 9). Control of HIV spread within this group is based on inducing individual risk reduction through education, counselling, syringe exchange and supply, free access to condoms or methadone maintenance.

In this area a sustained AIDS information and education campaign, particularly focused on drug-related risk behaviours has been conducted during the past 5 years in the absence of other specific preventive measures. The effects of such a campaign were already evident in 1987, when we performed a preliminary investigation in a sample of 185 long-term IVDA (2). In fact, participants reported a significant reduction of needlesharing and a significant increase in condom use.

Nevertheless, 38% of seropositive addicts still engaged in needlesharing and, overall, only a minority used condoms. The present study has been undertaken to evaluate whether, over a longer time span, information and education campaigns could

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promote and sustain extensive behavioural changes among IVDA in the same area and to identify possible impediments to behaviour change in this setting.

## PARTICIPANTS AND METHODS

### *Information and education campaigns*

The referral area of this study (Padua, northern Italy) is an industrialized urban and suburban area where the spread of drug abuse among young people was recorded in the late seventies and the first HIV seropositive case was detected, by testing stored serum, as early as 1980 (1,5). In 1985, screenings of drug abusers indicated that anti-HIV seroprevalence in long-lasting injectors reached 65% (4).

Local AIDS prevention campaigns had been started in 1985 to support broad public information and education provided by the national media. Local campaigns were also based on information and education: a booklet was mailed to all families in town; conferences were offered to teachers and students in secondary schools and to health care workers; posters specifically aimed at discouraging needlesharing were displayed; local newspapers and television have often been concerned with drug and AIDS-related problems. An outpatient service providing information, HIV screening and clinical follow-up was opened in 1985 at the Department of Infectious Diseases. Methadone posts and drug help organizations have been available since the early eighties.

### *Participants and methods*

The survey was carried out over a 6 month period between January and June 1990. Participants were enrolled on a voluntary basis among IVDU from the local population and attending four drug detoxification centers in the area. Sixty-five percent had been on methadone maintenance for one to two years as part of an integrated program which also included social rehabilitation and psychological support. No specific programs addressed to AIDS education were given to either seropositive or seronegative subjects in these centers. A face to face interview, using a structured questionnaire with 27 items, was administered in private by a social worker who was not implicated in the care of IVDU. The topics covered were: demographic data; knowledge of means of transmission and risk reduction beliefs; type of drugs used, injection behaviours and attitudes conducive to needle-sharing; sexual behaviours and impediments to behavioural changes.

All subjects were also asked to undergo anti-HCV testing or to provide the results of recent tests.

The statistical analysis of the data has been performed using the chi square test and the Cochran Cox test.

## RESULTS

One hundred and ninety IVDA participated in this study. An additional ten subjects, 9 male and one female, aged 23 to 30 years, with histories of abuse of longer than 5 years, refused to answer or did not complete the questionnaire; 4 were anti-HIV positive and 6 were negative.

Descriptive demographic data and anti-HIV seroprevalence in the 190 participants are shown in Table 1. More than 50% were male, aged 20 to 30 years, with less than a high school education (74%), living at home, and had been injecting for longer than 5 years.

TABLE 1. - Demographic features, duration of drug abuse and anti-HIV seroprevalence in the 185 IVDA observed in 1987 and in the 190 IVDA of the present study.

	IVDA observed in 1987 (2) = 185	IVDA observed in 1990 = 190
Male sex	142 (76%)	152 (80%)
Age (mean $\pm$ SD, years)	24 $\pm$ 8	25 $\pm$ 6
Living at home family	112 (60%)	130 (68%)
Unemployed	64 (34%)	71 (37%)
Duration of drug abuse		
> 5 years	139 (75%)	142 (75%)
3-5 years	46 (25%)	35 (18%)
$\leq$ 2 years	-	13 (7%)
Anti-HIV+	77/166 (46%)	66/175 (38%)

Anti-HIV information was available in 175 participants (169 had been previously tested and 6 were tested upon entering this study), 66 (38%) were positive, including 61 (43%) IVDA with long-term histories of drug abuse and 5 (19%) subjects with histories of injection from 3 to 5 years. None of the 10 IVDA with short-term abuse were positive. Demographic parameters and anti-HIV seroprevalence did not differ significantly among IVDA from different detoxification centers.

### *Transmission knowledge and risk reduction beliefs*

Sharing of needles and equipment and anal or vaginal intercourse were correctly identified as risk factors for HIV transmission by 98%, 96% and 93% of participants, respectively. Thirty percent of subjects incorrectly identified sharing utensils and non-sexual contacts with seropositive persons as means of transmission. Avoiding needlesharing, using condoms and having a steady partner were identified as good ways to reduce the risk of infection by 94%, 90% and 75% of respondents, respectively. None identified the pill as a method of risk reduction.

### Needlesharing

Of the 190 addicts 52% had shared needles in the past and had stopped after the AIDS information campaign, 26 (14%) were still sharing needles, including 3 who had been injecting drugs for less than 2 years. There were no significant differences between sharers and other drug abusers in relation to demographic parameters and characteristics of drug abuse. The same prevalence of anti-HIV (38%) was observed among sharers and other IVDA.

The motivations to share reported by the 26 IVDA included: unavailability of works at the time of injection (50% of respondents), "knowledge" of persons with whom equipment was shared (80%), poorly perceived risk (15%) and economic pressure (4%).

### Sexual risk behaviours

All 190 IVDA were sexually active: 89% were heterosexual, 6% were homosexual and 5% were bisexual. Twenty percent of IVDA claimed to be monogamous. Of the remaining subjects, 40 of 179 (22%) reported having more than ten different partners per year.

Overall 89 (46%) participants used condoms, 26% used them regularly and 20% occasionally. As shown in Table 2, the use of condoms was significantly associated with anti-HIV seropositivity since 80% of anti-HIV seropositive IVDA reported condom use as compared to 26% of seronegative subjects.

Also, IVDA with a higher number of partners and those with longer history of abuse were more likely to use condoms. The primary inhibitors to condom use were: poor acceptability of this device (65% of respondents), "knowledge" of the partner (26%), economic pressure (2%), other reasons, including lack of condoms at the time they were needed, (7%).

### Comparison with results in the previous study

In 1987 we conducted a study among drug abusers in the local population and attending 3 of the 4 drug detoxification centers included in the present

TABLE 2. - Demographic features, anti-HIV seropositivity, drug related and sexual behaviours in relation to condom use in the 190 IVDA, 1990.

	Use condoms (89 cases)	Do not use condoms (101 cases)
Male sex	67 (75%)	85 (85%)
Mean age ( $\pm$ SD, years)	25 $\pm$ 7	24 $\pm$ 8
Duration of drug use		
> 5 years	75 (84%)	67 (67%)
< 5 years	14 (16%)	34 (34%)
> 1 partner per month	23/79 (29%)	17/100 (17%)
anti-HIV+	53/82 (65%)	13/93 (14%)

study. As shown in Table 1, the demographic features, the characteristics of drug abuse and anti-HIV seroprevalence in the 185 participants were similar to those recorded in the present study. A high proportion of respondents reported risk behaviours before 1985 but had significantly reduced them as early as 1987. Table 3 summarizes the main risk behaviours recorded in the previous and in the present study.

TABLE 3. - Main risk behaviours observed in IVDA in the 1987 (2) and in the present study.

	Previous study (185 cases)		Present study (190 cases)
	Before 1985	1987	1990
Needlesharing:			
Total cases	118 (64%)	37 (20%)	26 (14%)
Anti-HIV+	60/77 (77%)	30/77 (38%)	10/66 (16%)
Use of condoms:			
Total cases	12 (6%)	40 (22%)	89 (46%)
Anti-HIV	4/77 (5%)	17/77 (22%)	53/66 (80%)

## DISCUSSION

The results of this study suggest that sustained AIDS information and education campaigns are being successful in maintaining the trend to reduce risk observed as early as 1987 among IVDA in this area (2).

This research design is limited by the fact that we could not investigate a cohort of IVDA, nevertheless population samples investigated in 1987 and in 1990 are comparable for size, have been recruited using the same criteria in the same limited area and share demographic patterns and characteristics of drug use.

Both in the present and in the previous study knowledge of the most frequent modes of transmission of HIV infection and risk reduction beliefs were found to be correct in about 90% of cases, indicating that information and education actually did reach the target population.

On the other hand, the effectiveness of education is supported by the observation that anti-HIV seroprevalence among drug abusers in our area has decreased from 65% in 1985 to 33% in 1988 (4). Also, a trend in the reduction of anti-HIV seroconversion rate has been recently demonstrated in a large sample of IVDA in Rome (10). In addition, the annual incidence of acute hepatitis B, which is transmitted by the same routes as AIDS, in the general population of the study area has dropped from 16 cases /10<sup>5</sup> inhabitants in 1985 to 4.9 and 5.6 cases in 1988 and 1989, respectively, while the number of IVDA hospitalized for acute hepatitis B went from 22 cases in 1985 to 6 and 7 cases in 1988 and 1989, respectively (3).

The proportion of IVDA sharing needles has remained relatively low with an apparent further reduction among anti-HIV seropositive subjects. We could find no significant differences between sharers and other drug abusers in relation to demographic or drug injection patterns and it is noteworthy that 12% of sharers has recently started drug abuse.

Economic pressure has been rarely reported as a motivation to share and lack of perceived risk of AIDS or fatalism account for 15% of cases. The circumstances in which drug use occurs seem to be much more important: sharing with known partners or friends is perceived as being "safe" by over two thirds of sharers and the lack of a syringe at the time it is needed is reported as a motivation to share by half of the participants.

There is apparently a trend in the increased use of condoms, particularly among anti-HIV positive long-term injectors and subjects with a higher number of partners, as if these categories perceived themselves to be at high risk of either transmitting or acquiring HIV infection. Encouragingly enough 80% of seropositive IVDA reported condom use; since most of these respondents were aware of their HIV status at the time of our investigation, it is likely that knowledge of seropositivity influenced sexual behaviours. A negative attitude towards condoms, reflecting a general attitude observed in young people in the area (unpublished data), and a selectivity about partners were the most frequent motivations preventing condom use. Taken together these findings suggest that, due to their positive effect, AIDS education campaigns, both directed at the general public and specifically targeted to risk groups, have to be encouraged and sustained. Nevertheless the discrepancy between adequate knowledge and the lack of individual risk reduction recorded in many of our participants suggests that knowledge may not affect risk behaviours. Similar findings have been recently reported in drug abusers in the New York City area (7). Therefore, other prevention strategies should be considered to implement risk reduction in our area, such as syringe exchange or supply to the limited number of sharers and counselling to encourage safer sex.

Clearly only education programs started in school early on, before behavioural risk patterns are established, can be expected to induce significant changes of sexual behaviour in young people.

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#### REFERENCES

1. *Bortolotti F., Cadrobbi P., Carretta M., Meneghetti F., De Rossi A. and Chieco-Bianchi L.* (1986): HTLV-III infection in drug abusers with acute viral hepatitis - Proceedings 2nd International Conference on AIDS - Paris: 19.
2. *Bortolotti F., Stivanello A., Dall'Armi A., Rinaldi R. and La Grasta F.* (1988): AIDS information campaign has significantly reduced risk factors for HIV infection in Italian drug abusers - *J. AIDS 1*: 412-413.
3. *Bortolotti F., Cadrobbi P., Crivellaro C., Meneghetti F., Carretta M., Stivanello A., De Rossi A. and Noventa F.* (1989): The changing epidemiology of acute type B hepatitis: results of an 11-year prospective study in Padua (Northern Italy) - *Infection 17*: 364-368.
4. *De Rossi A., Bortolotti F., Cadrobbi P. and Chieco-Bianchi L.* (1988): Trends of HTLV-I and HIV infections in drug addicts - *Eur. J. Cancer Clin. Oncol. 24*: 279-280.
5. *De Rossi A., Bortolotti F., Giacchino C., Calabrò M.L. and Chieco-Bianchi L.* (1989): Spread of human T lymphotropic virus type I (HTLV-I) in Italy - In: *Molecular aspects of human disease - Ellis Horwood, Chichester*: 266-271.
6. *Franceschi S., Tirelli U., Vaccher E., Serraino D., Crovatto M., De Paoli P., Diodato S., La Vecchia C., De Carli A. and Monfardini S.* (1988): Risk factors for HIV infection in drug addicts from the Northeast of Italy - *Int. J. Epidemiol. 17*: 162-167.
7. *Friedman S.R., Des Jarlais D.C., Sotheran J.L., Garber J., Cohen H. and Smith D.* (1987): AIDS and self-organization among intravenous drug users - *Int. J. Addict. 22*: 201-219.
8. *Lazzarin A., Galli M., Geroldi D., Zanetti A., Crocchio P., Aiuti F. and Moroni M.* (1985): Epidemic of LAV/HTLV-III infection in drug addicts in Milan: serological survey and clinical follow-up - *Infection 13*: 216-218.
9. *Rezza G., Titti F., Tempesta E., Di Giannantonio M., Weisert A., Rossi G.B. and Verani P.* (1989): Needle sharing and other behaviours related to HIV spread among intravenous drug users - *AIDS 3*: 247-248.
10. *Zaccarelli M., Rezza G., Girardi E., Puro V., Pezzotti P., Lelli V. and Narciso P.* (1990): Monitoring HIV trends in injecting drug users: an Italian experience - *AIDS 4*: 1007-1010.