

COMMUNITY EPIDEMIOLOGY WORK GROUP

**EPIDEMIOLOGIC
TRENDS
IN
DRUG ABUSE**

PROCEEDINGS DECEMBER 1990

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Alcohol, Drug Abuse, and Mental Health Administration

Division of Epidemiology and Prevention Research
National Institute on Drug Abuse
5600 Fishers Lane/Rockwall II
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FOREWORD

These proceedings contain reports from the 29th meeting of the Community Epidemiology Work Group (CEWG), that was held in Washington, D.C., on December 11-14, 1990. This community-based surveillance network was established by the National Institute on Drug Abuse (NIDA) in November 1976. It meets biannually to discuss current patterns of drug abuse with particular emphasis on consequence data, potential or emerging trends, factors that place populations at risk, and other issues of epidemiologic concern both in the United States and internationally.

In addition to reports on the status of drug abuse, the occasion of the CEWG meeting in Washington, D.C., provided the opportunity for presentations on a variety of topics by officials of NIDA and other U.S. Government agencies as well as researchers from abroad and representatives from international organizations.

Mr. Richard Millstein, the Deputy Director of NIDA, in his opening statement asserted the essential importance of surveillance in the Institute's mission and acknowledged the key role of the CEWG in this activity. He then explained several of NIDA's current major epidemiologic projects and long-term research priorities, which will focus on acquired immunodeficiency syndrome, treatment, prevention, epidemiology, medications development, and basic biomedical and behavioral research. The need for continued and expanded research collaboration between Federal, State, and local organizations and for communication and technology transfer also was stressed.

The organization, structure, functions, and activities of individual Institute divisions and offices as well as highlights of some of the most recent significant research findings were described by NIDA officials. These included presentations by Dr. Edgar Adams of the Division of Epidemiology and Prevention Research; Dr. Marvin Snyder, Director of the Office of Policy and External Affairs; Dr. Joseph Frascella of the Division of Preclinical Research; Robert Stephenson of the Division of Applied Research; Dr. John Ball of the Addiction Research Center; and Dr. Henry Haverkos, Acting Director of the Division of Clinical Research and the AIDS Coordinating Office.

Henrick Harwood, a senior analyst at the Office of National Drug Control Policy (ONDCP), which was established by the Anti-Drug Abuse Act of 1988, described the legislative mandate of ONDCP, and its role in coordinating activities among Federal agencies in the United States.

In addition, Dr. Thomas Harford described the specific mission and current epidemiologic research activities being conducted by the National Institute on Alcohol Abuse and Alcoholism. Howard Manly and Dr. Herman Diesenhaus, respectively, discussed the structure and major program activities of two other offices within the Alcohol, Drug Abuse, and Mental Health Administration: the Office of Substance Abuse Prevention and the Office of Treatment Improvement. Corinne Moody discussed the Food and Drug Administration's role as it affects issues of drug abuse.

In addition to its national efforts, the U.S. Government has several agencies with international missions which directly or indirectly concern drug abuse demand reduction. Arthur Houghton, a

Foreword

senior international policy analyst, explained ONDCP's role in coordinating these activities and described current international initiatives. Dr. William Olson, Deputy Assistant Secretary of State, explained the Bureau of International Narcotics Matters' responsibility in managing bilateral international narcotics assistance programs within the Department of State. Dr. Anthony Meyer of the Bureau for Service and Technology described activity at the Agency for International Development (AID) to help developing countries confront problems and consequences of drug abuse as they become increasingly apparent. Further description of major research activities currently being conducted by AID was given by Dr. Joel Jutkowitz of Development Associates. The responsibility of the United States Information Agency (USIA) in international communication and information dissemination was explained by Lee Johnson, Chief of the Drug Policy Unit at USIA.

The global scope of drug abuse and its health and social consequences are becoming increasingly apparent. It is therefore essential to continue developing community-based surveillance networks and to link them effectively regionally and internationally. The importance of these issues was highlighted in an address by Dr. Carlyle Guerra de Macedo, Director of the Pan American Health Organization (PAHO), who stressed PAHO's commitment to epidemiologic research and information exchange. These points were elaborated further by Dr. Enrique Madrigal, PAHO Regional Advisor on Alcohol and Drug Abuse, who also presented data from epidemiologic research projects recently conducted in various areas of the Americas.

Dr. Viz Nàvaratnam summarized organizational programs and recent research concerning drug abuse in Asia. He described new research initiatives being undertaken by the Colombo Plan for Co-operative Economic and Social Development in Asia and the Pacific to establish a regional epidemiologic surveillance program based on community level indicator data. Dr. Hubert Petit of the General Directorate for Public Health of the Commission of the European Communities provided an overview of the organization and drug abuse program activities. Edward Adlaf of the Addiction Research Foundation reported highlights from research studies conducted in Canada. These studies included surveys of student and adult populations and an ethnographic study of street youths in Toronto.

The complexity, the pervasiveness, and the impact of drug abuse is reflected in the papers in these proceedings. Also reflected is the implicit recognition that a coordinated system of local, national, and international surveillance and information exchange can be a basis for detection of emerging problems and for early intervention.

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The city drug abuse indicator trend reports contained in this document are substantively the same as originally submitted by the authors. However, reports have been reformatted and edited to enhance the presentation. The National Institute on Drug Abuse (NIDA) acknowledges the contributions made by the members of the Community Epidemiology Work Group (CEWG) who have invested their own time and resources in preparing the reports presented at the meetings.

Reports prepared by international researchers and special presenters are also included in this publication.

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BEHAVIORAL CHANGES IN THE GERMAN INTRAVENOUS DRUG USE SUBCULTURE

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THE DRUG PROBLEM IN THE FEDERAL REPUBLIC OF GERMANY (FRG)

Drug use in (West) Germany demonstrates several specific problems in comparison to those of the United States. Most hard-drug users (an estimated 80,000 to 100,000) primarily inject heroin; however, they also use additional drugs and medical substances, so that the multitoxic drug user predominates. Additionally, the use of performance drugs, especially amphetamines and cocaine, has become more significant. In 1989, for example, at least 25 percent of the 8,700 first-time users recorded by crime investigators had used cocaine, and 15 percent had used amphetamines. Designer drugs, such as crack, have until now played only a minor role in the FRG. Nevertheless, it is assumed that the international increase in the drug problem is also having effects in former West Germany. For example, even with end-of-year statistics not yet available, deaths caused by drugs have increased approximately 45 percent (N=975) between 1989 and 1990. As of September 1990, there had been 1,000 recorded cases of drug-related deaths. Following German reunification, there will be a temporary statistical decrease in the drug problem because drugs were only occasionally used in the former German Democratic Republic (GDR). However, initial studies of young East Germans show that around 30 percent of them would, in principle, be ready to try illegal drugs. In addition, an increase in the drug problem, especially a rise in drug availability, will be more likely due to European integration and open borders.

We should not, however, overlook the fact that existing West German estimates of the extent of drug usage merely reflect the opinions of criminal investigators and experts in drug users' support programs. These opinions are therefore not scientifically proven. Estimates of drug use can also be made from official figures available in West German registers, where records are kept of new AIDS-incidence rates. According to these sources, the estimated number of drug users is 40,000--lower than the 80,000-100,000 estimate of the criminal investigation department and the Deutsche Hauptstelle gegen Suchtgefahren (German Center Against Drug Abuse) and much lower than the 220,000 expected for 1990 by Reuband.

THE CURRENT SITUATION AND DEVELOPMENT OF THE PROBLEMS OF HUMAN IMMUNODEFICIENCY VIRUS (HIV) AND ACQUIRED IMMUNODEFICIENCY SYNDROME (AIDS) IN THE FRG

As in the other countries in which AIDS and HIV are spreading according to pattern 1 (World Health Organization), the number of AIDS cases among drug addicts has continuously increased in the FRG. This increase is greater than that of other affected groups. Between 1986 and 1990, the number of intravenous drug users (IVDUs) rose from 6.8 percent to 13.4 percent (exhibit 1).

Since 1983, when the first case of AIDS among IVDUs in West Germany was diagnosed, a series of prevalence studies has been conducted (exhibit 2). Initial investigations revealed high prevalence rates (up to 42 percent). However, these rates were no longer found after 1986 and 1987. Most of the studies summarized in exhibit 2 are, however, unsuitable for prevalence estimates among the general population, as they were carried out in several separate locations (site selection) and in specific institutions (institutional selection) with small nonrepresentative populations. One exception is our differential-epidemiologic study, carried out by the Sozialpaedagogisches Institut Berlin (spi) and conducted at different locations. This study investigated drug addicts from different walks of life and social backgrounds with an "outreach epidemiology" strategy. Between 1988 and 1989, a total of 1,252 drug addicts were interviewed and tested for HIV antibodies. The average age was 26.8 years; one-third of the subjects were female and two-thirds were male (exhibits 3 and 4).

We found an HIV-prevalence rate of 19.4 percent in the total population; the 22.8-percent HIV-positive rate of the Berlin sample was significantly higher than that of Nordrhein-Westphalia (18.6 percent) or than the rural area of North Germany (13.4 percent).

It is especially significant from a preventive point of view that the HIV-prevalence rate among IVDUs living in the public scene was higher at 28.4 percent than among inpatients (15.8 percent) or outpatients (18.8 percent) (exhibit 5). These results refer to the high selectivity of drug users' support programs and to the necessity of low-threshold programs as well as strategies of harm reduction.

Exhibit 6, which includes the results of a study conducted in collaboration with the European Community, clearly indicates that the *differences* in prevalence between the street sample and the sample receiving treatment have increased over time. This phenomenon reemphasizes the necessity of target-group- and life-situation-oriented AIDS prevention programs.

CHANGES IN BEHAVIOR AMONG IVDUs

Longitudinal studies--under methodological conditions--would be the best way of investigating changes in sexual behavior, as well as in drug use and drug-taking behaviors. But such methods are extremely expensive in terms of researchers and personal costs (Kindermann 1989; Kindermann *et al.* 1989) and have other considerable disadvantages. The most obvious example is the problem of data protection. Anonymity and complete freedom of the subject's decision to participate are examples of absolute prerequisites of compliance-optimization, but they can hardly be preserved in a longitudinal design. In addition, IVDUs have a fairly high mobility, so that any followups would result in highly selected samples. Cross-sectional studies, which obtain material concerning current sexual behavior as well as drug use and drug-taking behavior, at least help pinpoint relevant epidemiologic trends.

The method of obtaining material from subjects' own descriptions about reported changes in behavior was most favored until recently. Scientists now consider it a less satisfactory way to collect data, but it has no alternative, especially at the beginning of research and under pressure of time.

However, it must be emphasized that such self-reports about changes are always dependent on individual frames of reference, and bias due to social desirability is to be expected. This indicates some of the problems which may arise.

A comparison of self-reported behavioral changes in four relevant areas is shown in exhibit 7. It clearly points out that drug users are generally aware of the preventive approaches of safe use and safe sex.

Since the general public awareness of AIDS, significant changes in behavior can be seen in all four of the behavioral areas, including drastic changes in the case of an HIV-positive result.

Ceasing or even reducing drug use is a feasible way of preventing HIV infection only for a minority. According to self-reports, 12 percent of drug-using male and female prostitutes and at least 16 percent of those who had been identified as HIV positive had either reduced or given up drug use (at least 90 percent of subjects already knew whether they were HIV positive or not).

The most extreme behavioral changes concerned needle sharing. By 1989, 70.1 percent of all drug addicts, including prostitutes, and 82 percent of HIV-positive subjects had reduced the frequency of needle sharing since becoming aware of the dangers of AIDS. By contrast, changes in sexual behavior, especially in condom use, have been less significant. A reduction in promiscuity was reported by barely 60 percent of the total number of subjects and by 70

percent of those who were HIV positive, but only in 43 percent of the drug-addicted prostitutes. This finding is important in considering future approaches to AIDS prevention.

Less impressive results are obtained when more stringent criteria for behavioral changes are laid down, as indicated by exhibit 8, which compares the results from Nordrhein-Westphalia and Schleswig-Holstein during three investigatory periods (1988 to 1990).

The extent to which HIV-negative IVDUs fulfilled the most exacting demands of preventive behavior between 1988 and 1990 was recorded. The results indicate more extensive changes in drug use than in sexual behavior, an issue which has been brought up repeatedly in various investigations.

Exhibit 8 shows that the proportion of those who are not promiscuous, i.e., those who have had either zero or only one sexual partner in the last year, had risen from 52 percent to 57 percent.

An increase of preventive behavior in needle sharing was noted, although there were also fluctuations. While 41.6 percent of HIV-negative subjects reported in 1988 that they no longer shared needles, this figure had reached 50 percent by 1990.

Condom use reflected the least significant and most questionable behavioral changes. The rate of regular condom use was 18.8 percent in 1988; by 1990, it had continuously decreased. A brief evaluation of these results should emphasize the following two points:

- Although needle sharing has been reduced, much remains to be achieved. Additional qualitative investigations carried out within our study, which are still being evaluated, show that inadequate preventive behavior in Germany is caused less by a lack of availability of needles and syringes than by demoralization and indifference.
- Strategies for preventing the spread of HIV infections have until now inadequately changed sexual behavior. For example, approximately 1,000 drug addicts live in Bremen, a large northern German city; yet only 100 condoms are distributed every month, compared to approximately 18,000 needles and syringes in the framework of an AIDS prevention approach of harm reduction. Thus, safe use is more highly emphasized to prevent AIDS than safe sex. Additional qualitative investigations show that 20 percent of subjects ignore the risk of becoming infected through unprotected sexual intercourse, 8.8 percent see no danger of infection, and 3 percent deny any risk of infection whatsoever. Analysis of fundamental predictors of condom use may indicate where behavior support should be concentrated.

DETERMINANTS OF CONDOM USE

The relative influences of different predictors of the dependent variable "the use of condoms in the past year" for addicts who at the time of interview were either HIV-negative or did not know whether they had the virus, were calculated from multiple regressions.

These calculations show a sex-specific determinate in condom use. The attribution of the variance for female drug addicts to the investigated variables (sexual identity, psychosocial stressors, material daily stressors, level of education, prostitution, social support, level of debts) was very high, with a coefficient of determination of 0.46 (exhibit 9).

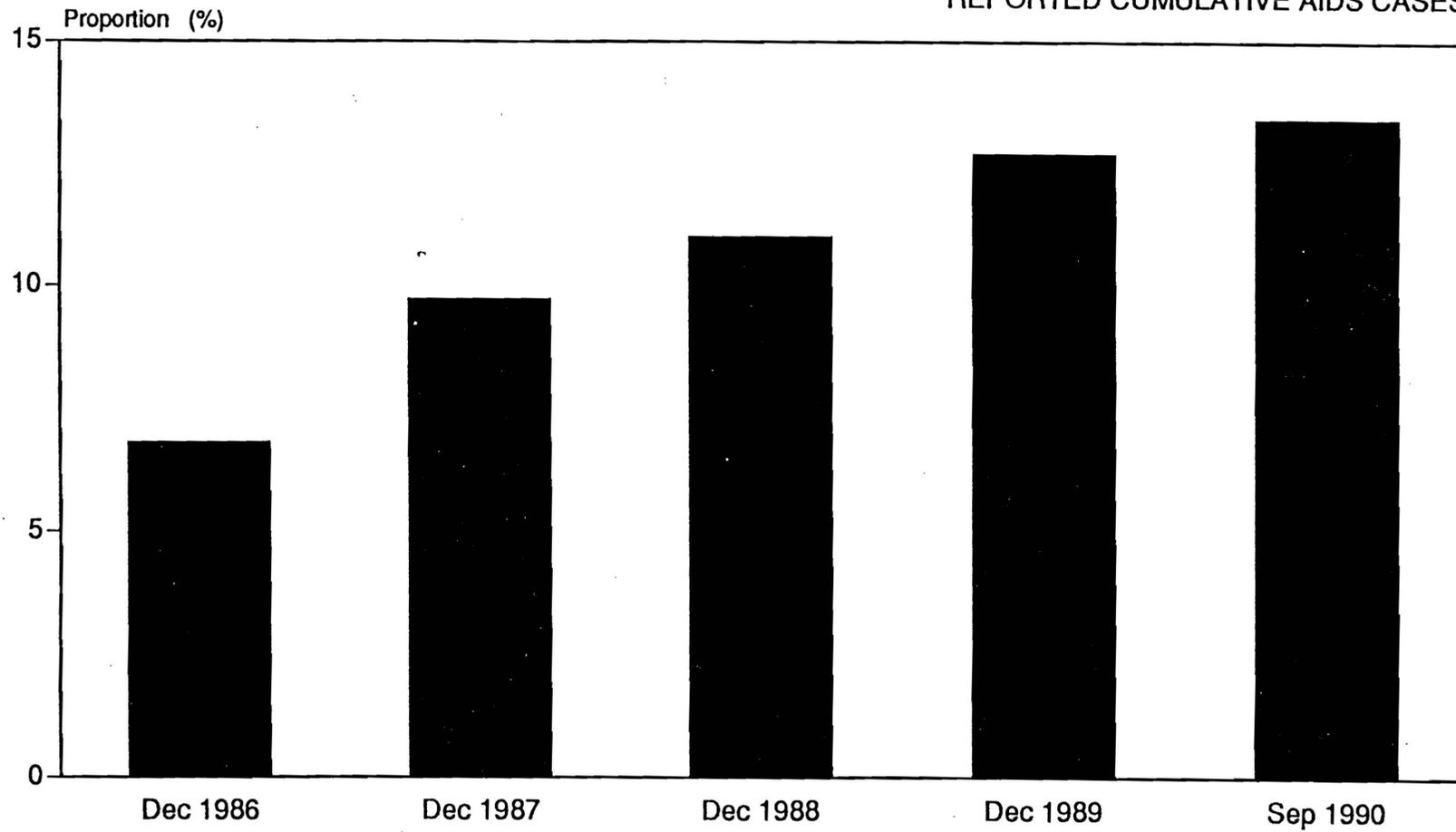
Prostitution was the decisive predictor for condom use among women ($B=0.65$); however, the extent of the burden of debt had a slight, but nevertheless significant, influence: the greater the level of debt, the lower the rate of condom use within the drug-addicted female population.

A totally different and more diversified prediction model was constructed for male IVDUs (exhibit 10). First of all, a significantly smaller proportion of variance can be attributed to the same independent variables (coefficient of determination = 0.20). The most relevant predictor of condom use was sexual identity: homosexuals behaved in a way more likely to prevent the HIV spread than bisexuals or heterosexuals. Factors such as level of education, social support, the extent of daily material stressors (daily hassles), and level of debt also had a significant influence among male IVDUs.

If we look at condom use in the past year in relation to gender and history of prostitution, we can identify a particular target group for further preventive programs (exhibit 11). Significant effects within the gender and prostitution factors are found as well as a significant interaction between them (gender x prostitution). The interactive effect indicates that female prostitutes have a significantly higher rate of condom use (71.9 percent) than male prostitutes. Male prostitutes with a heterosexual identity are a particularly problematic group; they used condoms on average in only 23 percent of their sexual contacts in the last 12 months, while condoms were used in 59 percent of sexual contacts by homosexual or bisexual male prostitutes ($p < 0.01$, adjusted for number of male sexual partners).

EXHIBIT 1

FEDERAL REPUBLIC OF GERMANY
PROPORTION OF IVDU^s: TOTAL NUMBER OF
REPORTED CUMULATIVE AIDS CASES



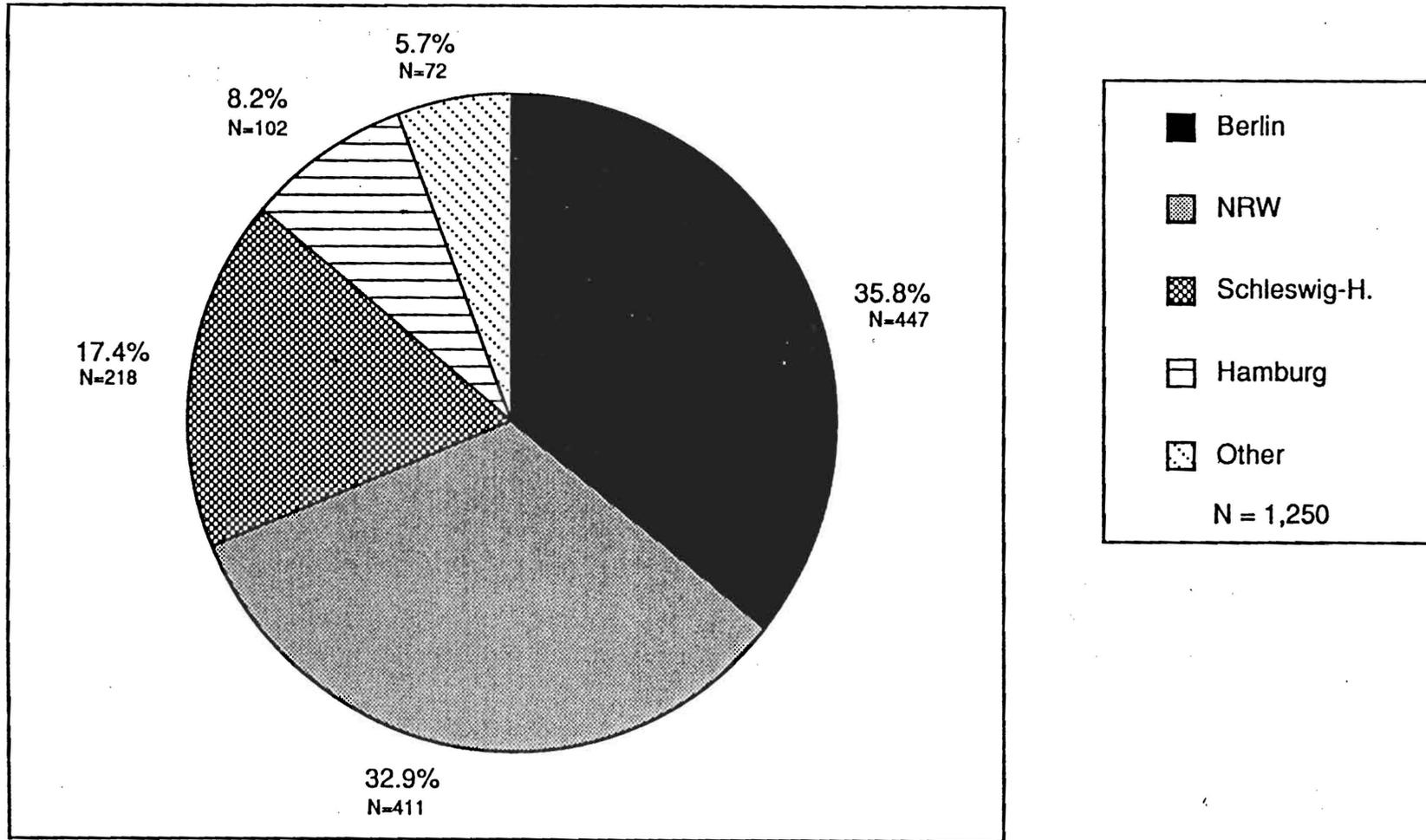
SOURCE: Federal Health Office

FEDERAL REPUBLIC OF GERMANY
HIV - PREVALENCE RATES IN IVDU_s IN THE FRG

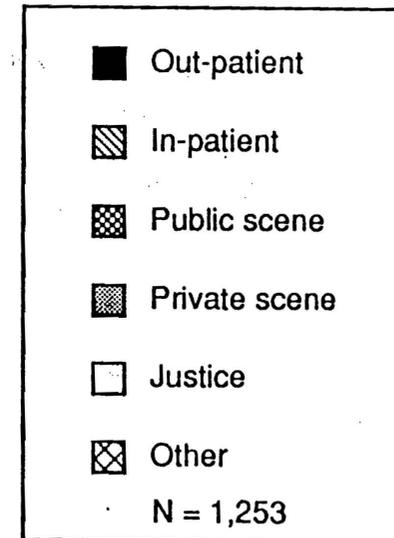
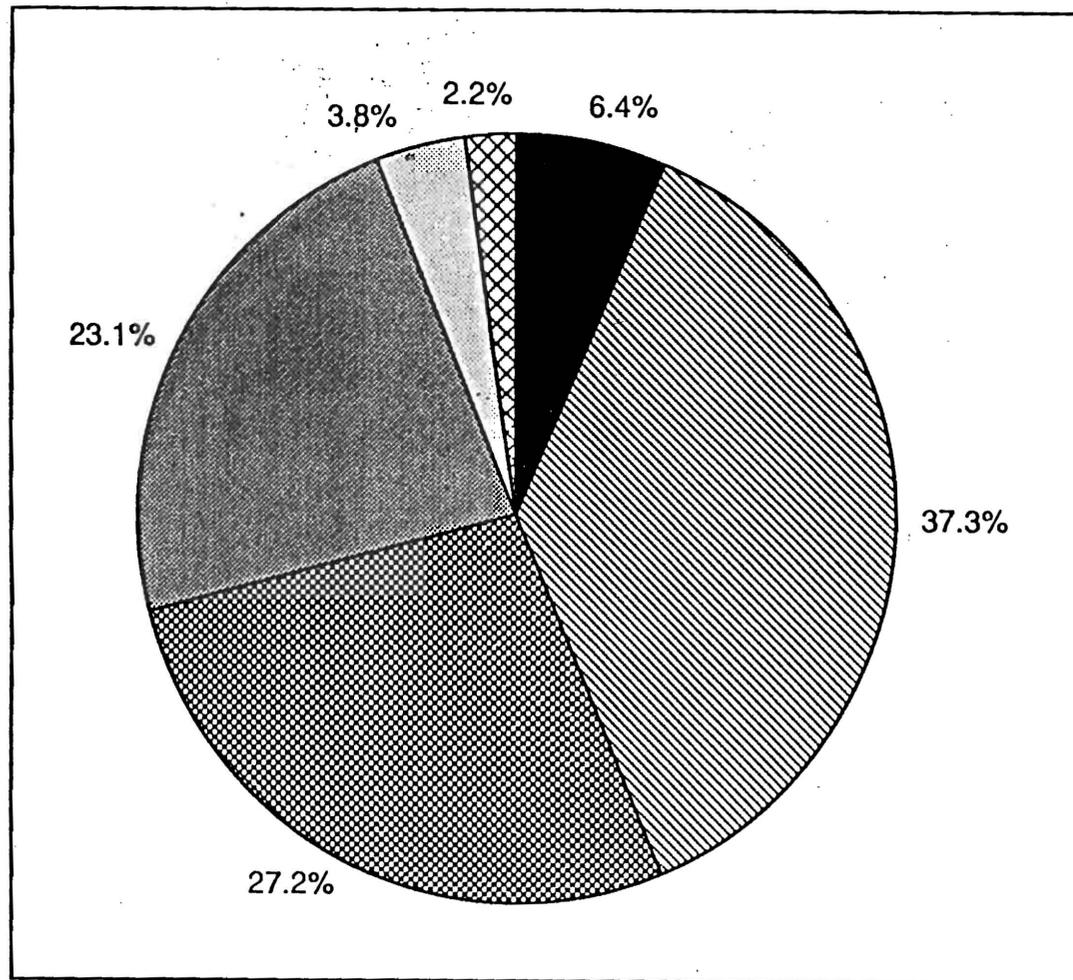
SOURCE	YEAR OF INVESTIGATION	HIV - PREVALENCE (%)	N	POPULATION
Große - Ald.	1985/86	35.0	126	Berlin (in treatment) NRW (justice)
Harms	1984-86	28.0	320	Berlin (in treatment)
Kindermann	1985/86	27.0	248	Frankfurt/M. (in treatment, counseling centres, justice, public scene)
Kleiber	1988/89	total 19.0 Berlin 23.0 NRW 19.0 North.-G. 13.0	1,253	In treatment, justice, public and private scene
Kleiber/Pant	1990	NRW, 18.2 Schl.-Holst.	200	Public scene, in treatment
Köhler bzw. Rex	1982 1983 1984 1985/86 1987 1988	0.2 11.0 23.0 42.0 38.0 23.0	2,110	Berlin (justice)
Lüth	1988	14.0	195	Hamburg (justice)
Paschelke	1985	17.0	157	Different areas of Northern Germany (justice)
Püschel	1985-88	15.0 25.0 Berlin 42.0	753	Drug deaths (Berlin, Hamburg, Köln, Frankfurt, Stuttgart, Munich)
Stark	1984-88 IVD until '83/84 IVD until '85/86 IVD until '87/88	23.0 20.0 31.0 16.0	741	Berlin (in treatment, anonymous AIDS- counseling)
Zoulek	1983 1984 1985	10.0 18.0 24.0	927	Different areas of the FRG (justice, in treat- ment, clinics)

EXHIBIT 3

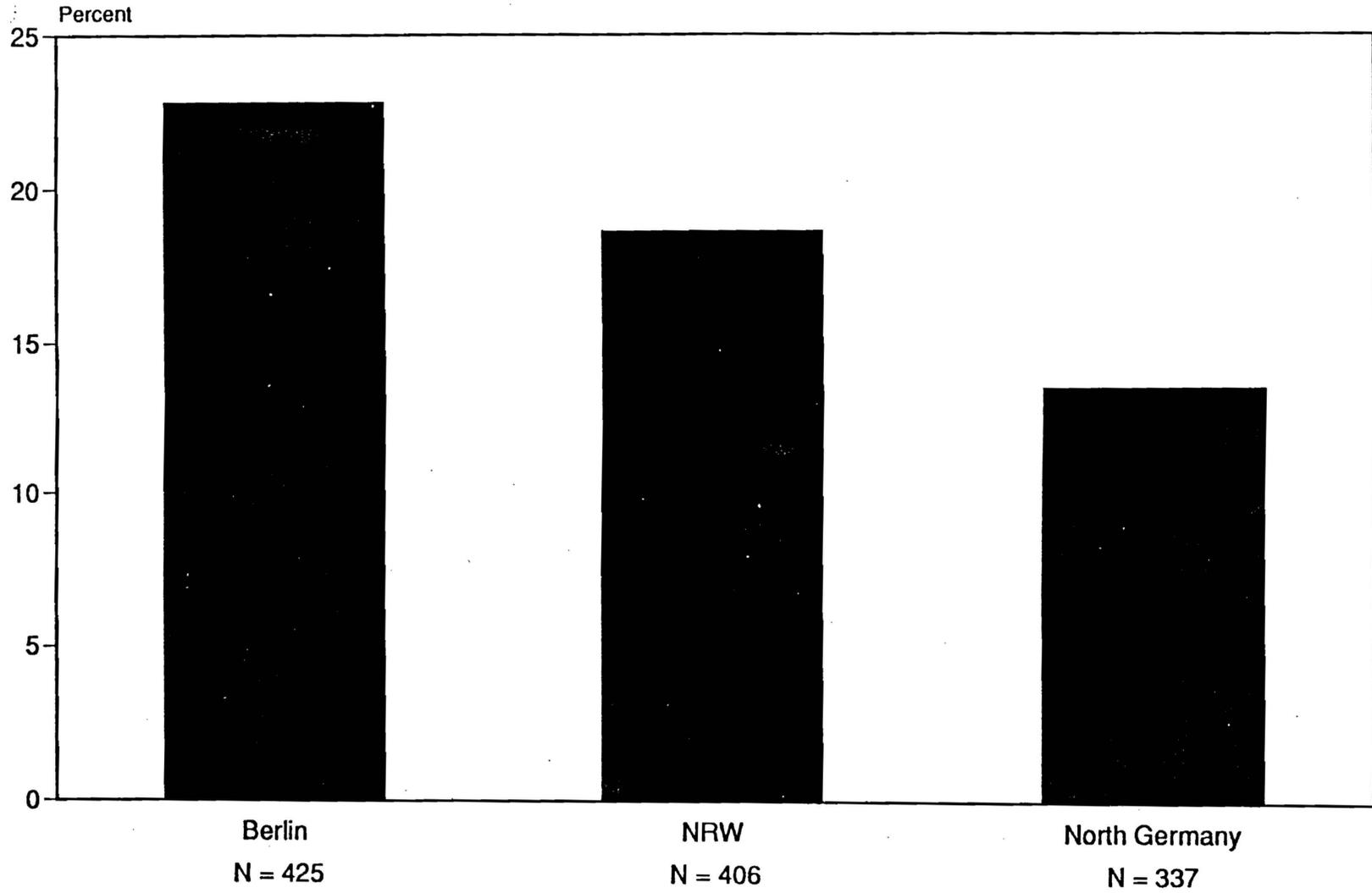
FEDERAL REPUBLIC OF GERMANY
SAMPLE STRUCTURE ACCORDING TO REGIONS



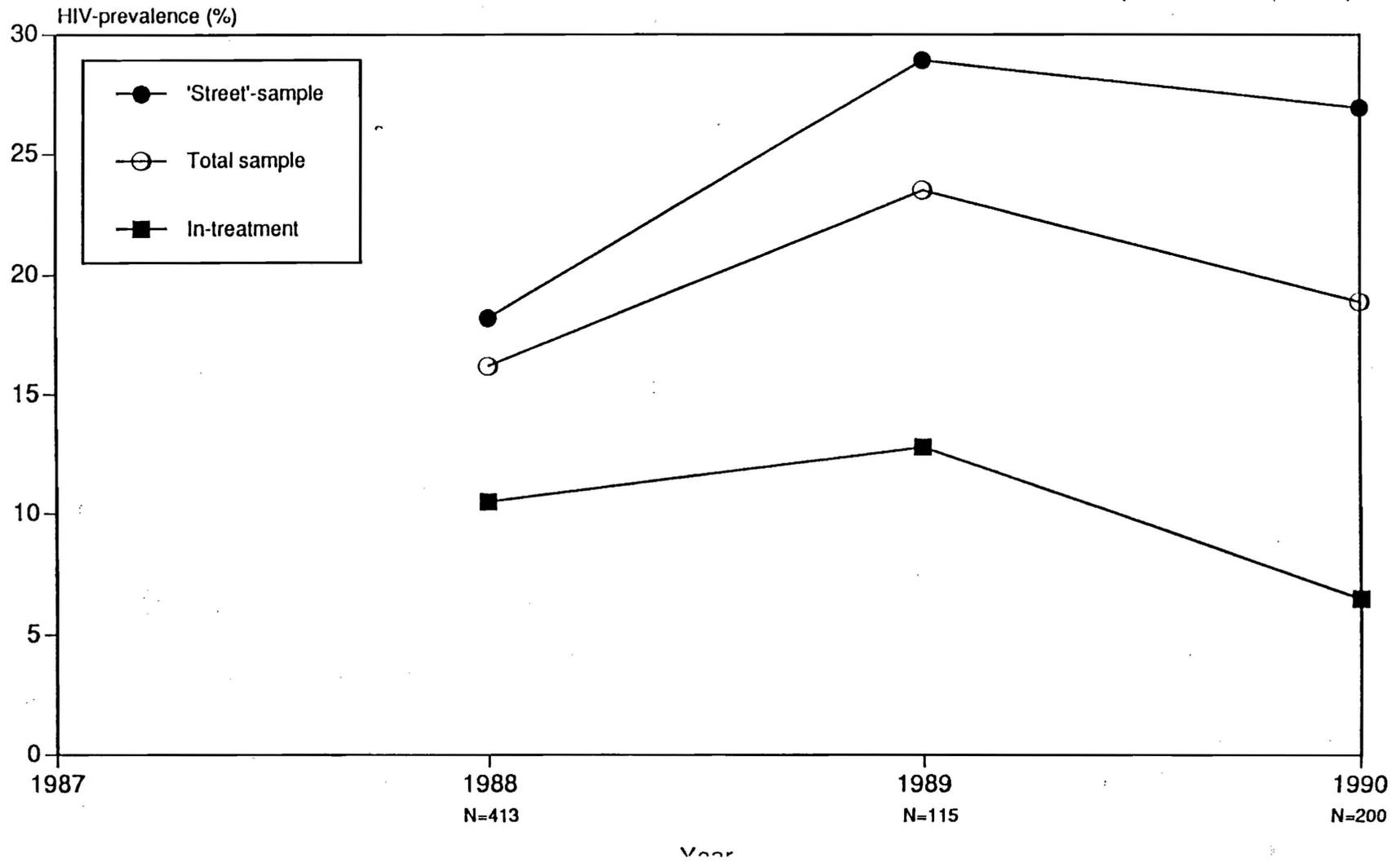
FEDERAL REPUBLIC OF GERMANY
STRATIFIED SAMPLING STRUCTURE



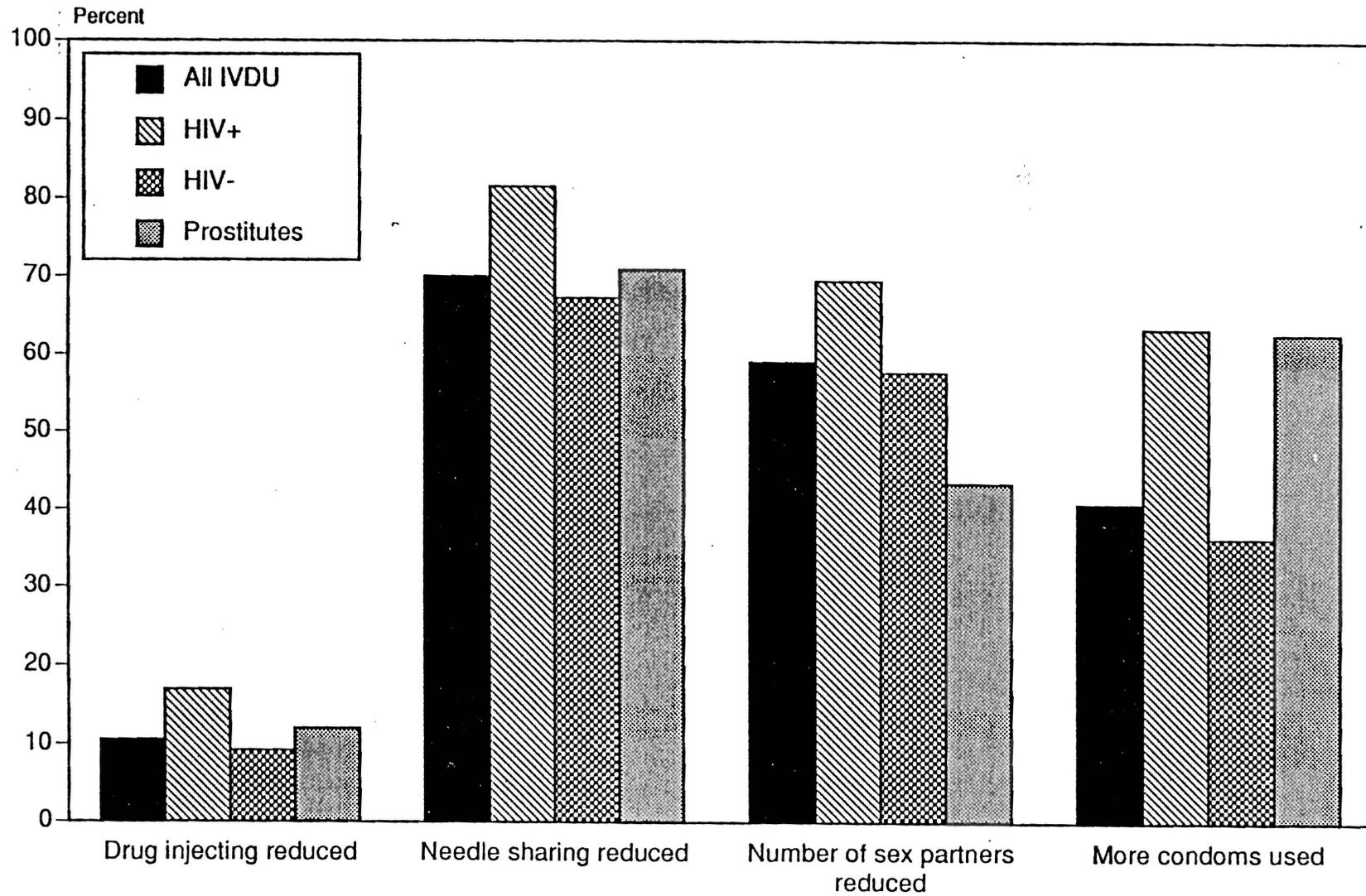
FEDERAL REPUBLIC OF GERMANY
HIV-PREVALENCE ACCORDING TO REGIONS



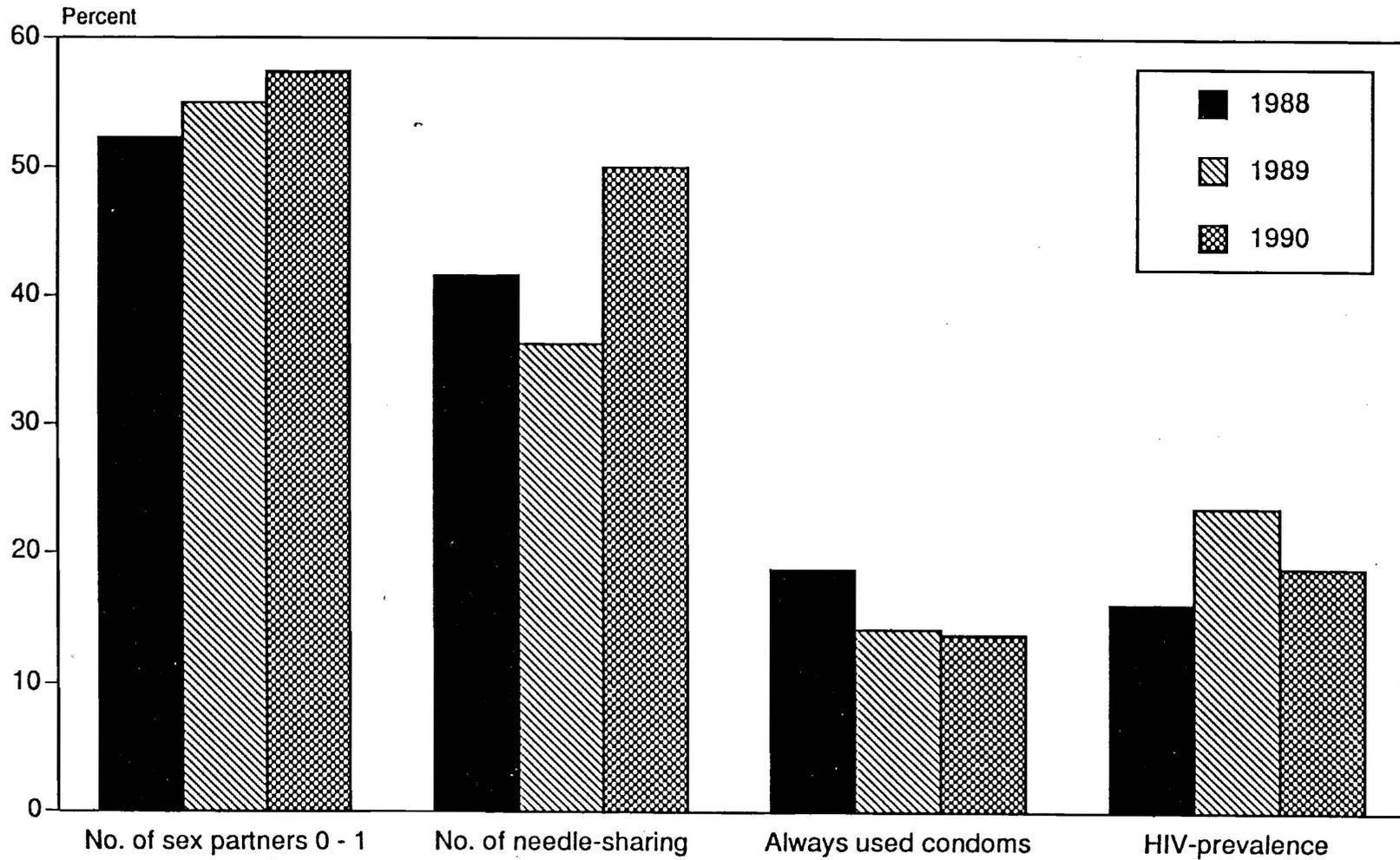
FEDERAL REPUBLIC OF GERMANY
HIV-PREVALENCE 1988 - 1990
(SAMPLE NRW/S-H)



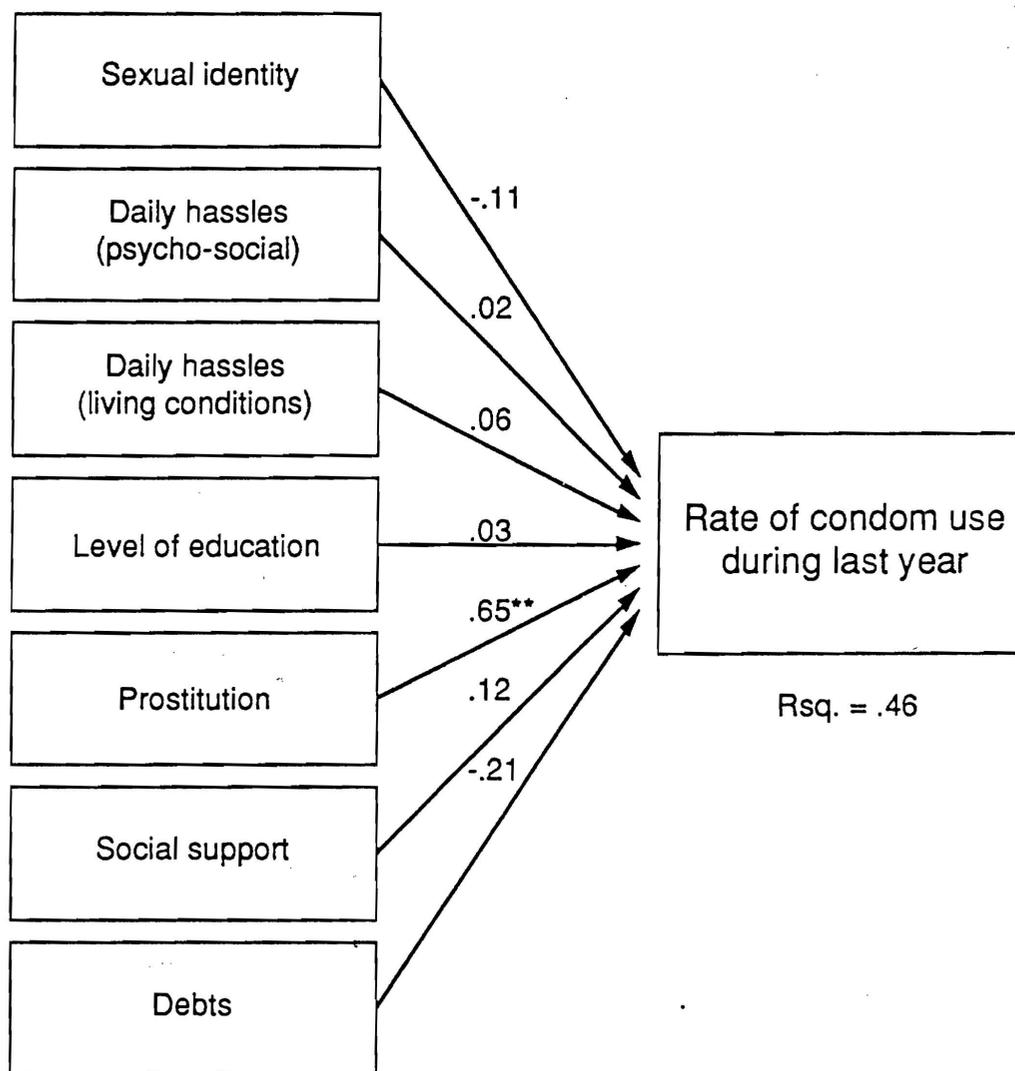
FEDERAL REPUBLIC OF GERMANY
CHANGES IN BEHAVIOR AS A REACTION TO AIDS



FEDERAL REPUBLIC OF GERMANY
PREVENTIVE BEHAVIOR AMONG HIV-NEGATIVE IVDU
1988 - 1990



FEDERAL REPUBLIC OF GERMANY
 PREDICTORS OF CONDOM USE AMONG FEMALE IVDUS
 (HIV-STATUS NEGATIVE OR UNKNOWN; N = 224)

Variables:

Sexual identity: 1=heterosexual; 2=bisexual; 3=homosexual

Daily hassles (psycho-social): score for having experienced psycho-social hassles like quarrels, loneliness, etc.

Daily hassles (living conditions): score for having experienced daily hassles like problems with food, dwelling, money, etc.

Level of education: 1=lowest level; 5=highest level (university)

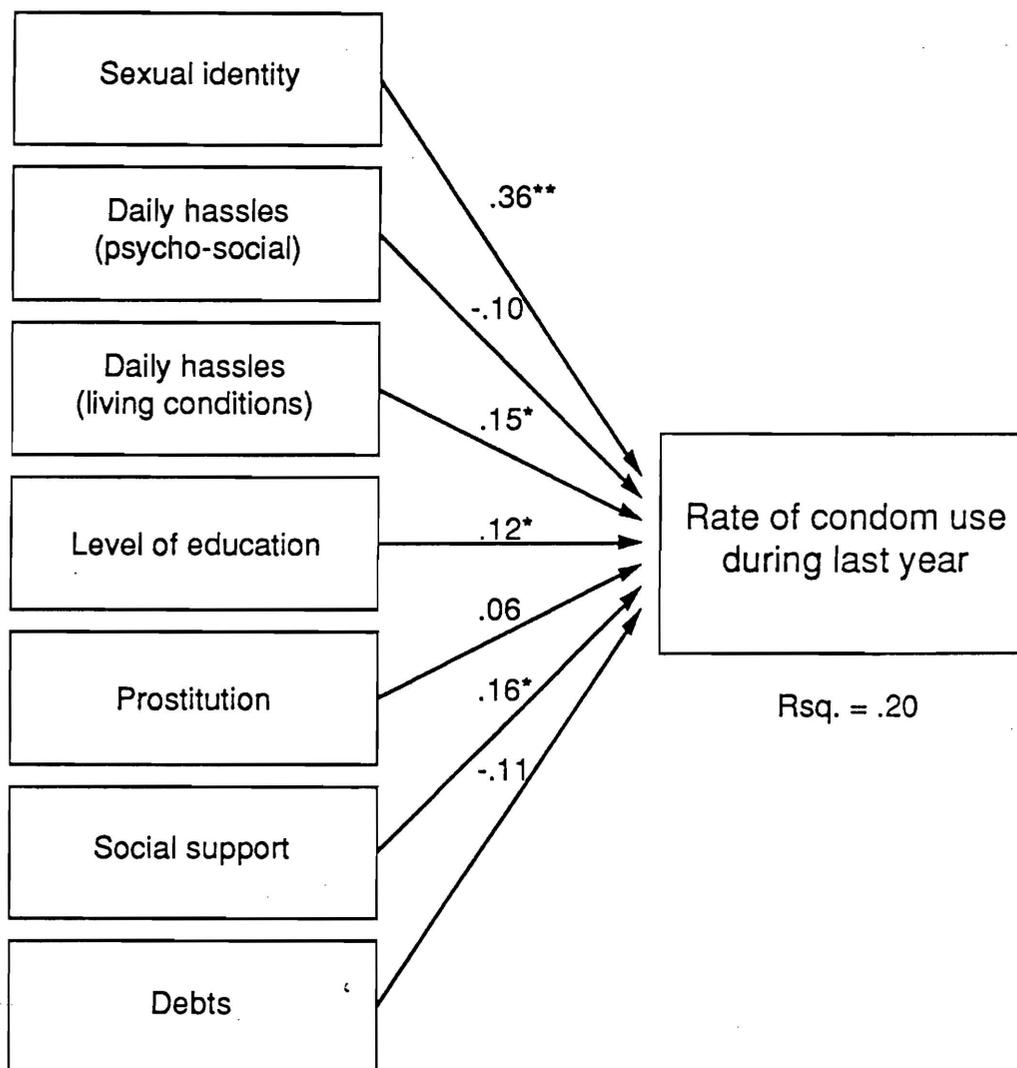
Prostitution: 0=no history of prostitution; 1=respondent has a history of prostitution

Social support: meanscore of a social-support-scale

Debts: 1=no debts;...6=more than 100,000 DM

Rate of condom use during last year: 1=0%; 2=1-25%; 3=26-50%; 4=51-75%; 5=76-99%; 6=100%

FEDERAL REPUBLIC OF GERMANY
 PREDICTORS OF CONDOM USE AMONG MALE IVDUs
 (HIV-STATUS NEGATIVE OR UNKNOWN; N = 447)



Variables:

Sexual identity: 1=heterosexual; 2=bisexual; 3=homosexual

Daily hassles (psycho-social): score for having experienced psycho-social hassles like quarrels, loneliness, etc.

Daily hassles (living conditions): score for having experienced daily hassles like problems with food, dwelling, money, etc.

Level of education: 1=lowest level; 5=highest level (university)

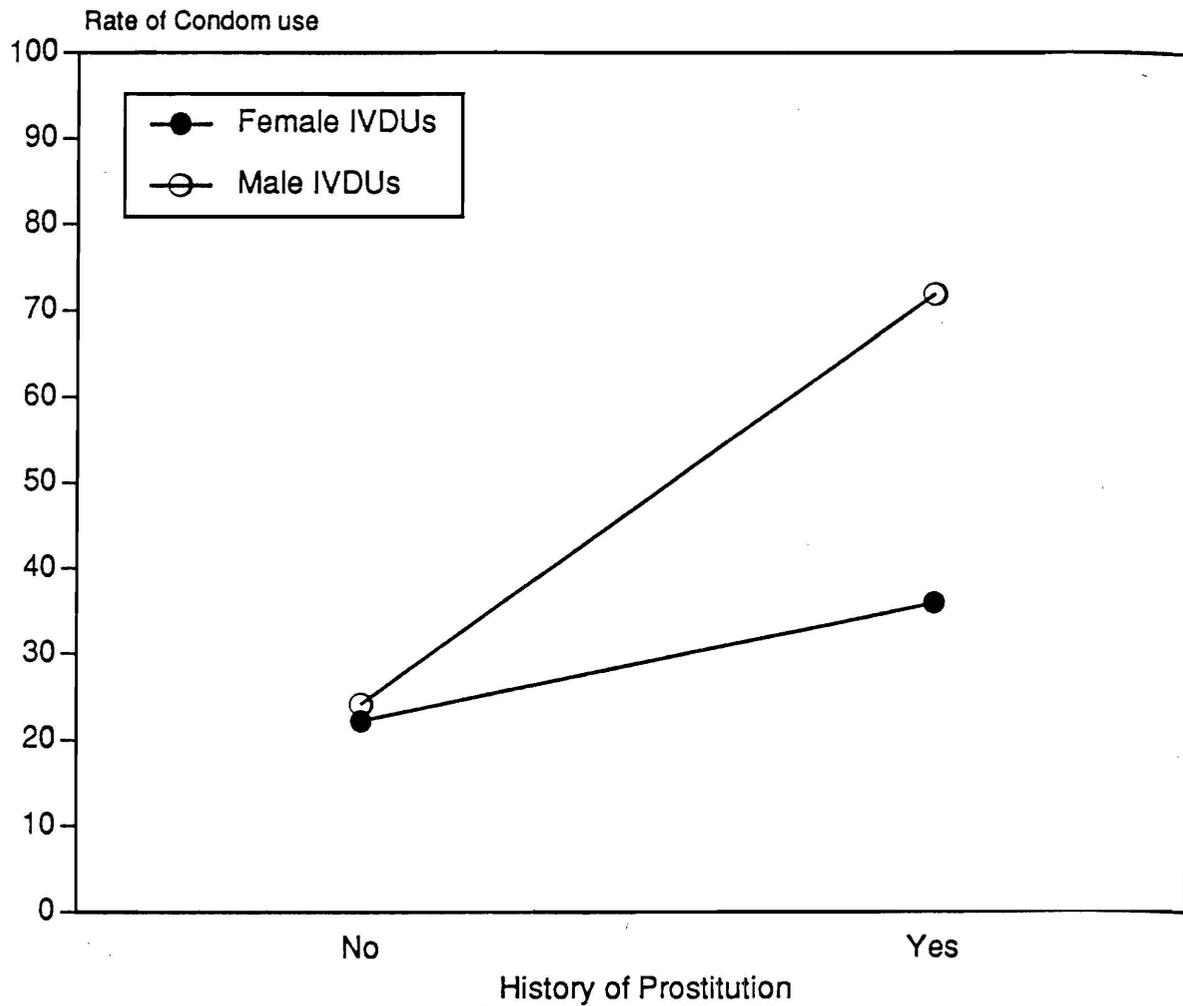
Prostitution: 0=no history of prostitution; 1=respondent has a history of prostitution

Social support: meanscore of a social-support-scale

Debts: 1=no debts;...6=more than 100,000 DM

Rate of condom use during last year: 1=0%; 2=1-25%; 3=26-50%;4=51-75%; 5=76-99%; 6=100%

FEDERAL REPUBLIC OF GERMANY
 RATE OF CONDOM USE DURING LAST YEAR
 RELATIVE TO GENDER AND HISTORY OF PROSTITUTION



N = 511; Subjective HIV-status negative or unknown;

Effect 'sex': F = 21.6 df1 = 1; df2 = 507; p < .001
 Effect 'prostitution': F = 56.8 df1 = 1; df2 = 507; p < .001
 Interaction 'sex by prostitution': F = 17.4 df1 = 1; df2 = 507; p < .001