HIV/AIDS Risks as a Consequence of Schizophrenia

by Irving I. Gottesman and Carol S. Groome

Abstract

Given both the rapid rise in the prevalence of HIV infection among adolescent and adult males (0.6%) and females (0.1%) in the United States from 1984 to 1992 and the associations among HIV, injection drug abuse, homosexuality, and sexual promiscuity, it is important to determine whether individuals diagnosed with schizophrenia are at a higher than average risk of HIV infection. Stereotypes from the recent past about sexuality in both male and female patients were examined as an integral part of a literature review. Data from a dozen or so studies conducted since 1990 confirm and strengthen the impressions that persons with schizophrenia should be considered a group with a much higher than average risk for developing HIV/AIDS and that they have special needs for protection as a public health measure. Mental health service providers need to be aware of these findings.


The number of AIDS cases has continued to rise despite mass media attention and educational programs. The Centers for Disease Control and Prevention HIV/AIDS Surveillance Report (1995) for year-end 1995 confirmed 506,538 adult and adolescent cases of AIDS in the United States since 1980, of which 315,928 were already recorded as AIDS-related deaths (a mortality rate of 62.5%). Computer updates to the beginning of 1997 (http://www.cdc.gov/nchstp/hiv_aids/dhap.htm) raise these tolls to 540,806 and 338,831, respectively. New estimates of the prevalence of HIV infection in this country for the period 1984–92 (Karon et al. 1996) yield a range of 650,000 to 900,000 persons. When unreported and undetected cases—only 26 States report confidential information on HIV status—of both HIV infection and AIDS are taken into consideration, the magnitude of the public health problem is overwhelming. A fatal disease that was once thought to be limited to a small segment of the homosexual community has become a major morbidity factor. Research has delineated what are now known to be high-risk behaviors for HIV infection and has identified numerous high-risk groups. Results consistently show the mentally ill to be a group at high risk for HIV infection. However, schizophrenia itself remains a neglected group for study in this area.

Since the deinstitutionalization of the mentally ill (Torrey 1997), people with schizophrenia have moved into the community with reduced capacity to deal with such additional threats to their well-being as infection from HIV, the virus that causes AIDS. Their disadvantaged social and economic status (Caton et al. 1994, 1995; Warner 1994) often places them in contact with known high-risk populations. The high incidence of homosexuality (Sacks et al. 1990; Kalichman et al. 1994; McDermott et al. 1994), substance abuse (Drake and Wallach 1989; Test et al. 1989; Dixon et al. 1991; Drake et al. 1996), sex for sale (Kelly et al. 1992; Cournos et al. 1994; Susser et al. 1995), and homelessness (Empfield et al. 1993; Kalichman et al. 1994; Susser et al. 1995, 1996) also places these people in high-risk situations. When combined with their secondary naiveté about social realities and negligence toward personal safety and health (McEvoy et al. 1983; Corrigan et al. 1992), the risks escalate even further. Sewell (1996) concluded that HIV in conjunction with schizophrenia leads to exacerbated symptoms of both the disorder and the disease, thus complicating diagnosis and treatment. This conclusion reinforces the need for awareness among service providers of the HIV risks inherent among those with schizophrenia.

There is no strong evidence to support the probability that those with HIV/AIDS are at a markedly increased

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risk for developing schizophrenia. Atkinson and Grant (1994), reviewing the available studies, report that in the late stages of illness AIDS dementia complex (ADC) will lead to psychotic conditions exhibiting first-rank symptoms often seen in schizophrenia. Prevalence rates for ADC ranged from 0.1 to 5 percent. We do believe, however, that there is strong evidence that those who have schizophrenia are at higher risk for subsequent HIV infection.

This article compares recognized HIV risk behaviors with what is known of such behaviors among schizophrenia patients. We will review the current literature on the seroprevalence of HIV in the chronically mentally ill population with the intention of clarifying whether patients with schizophrenia are a population at particularly higher risk for HIV/AIDS infection. As many of the studies involved small samples, lacked controls, were limited to large urban areas, and lacked sophisticated methodology, no formal meta-analyses were attempted. The information is presented in the “context of discovery” because of its importance to the public health.

Studies selected for review were accessed through a keyword search in PsycLIT since 1974 and in Medline since 1966, both up to June 1996, with further citations gathered from the bibliographies in the identified sources. No unpublished or unrefereed data were included. The authors limited the review to U.S. studies because high-risk behaviors—injected drug use, sex for sale, and homosexual practices—limit generalizability to other societies. An overview of the findings from the 13 relevant studies published since 1990 are presented in table 1 and are discussed below.

| Table 1. Studies of prevalences of HIV positive status and of risky drug and sexual behaviors among patients with schizophrenia (1990–95) |
|---|---|---|---|---|---|---|---|
| Study | Sample size (n) | Schizophrenia or non-affective psychosis (%) | HIV positive (%) | Injection drugs (%) | Male-male sex (%) | Trade sex (%) | Multiple partners (%) |
| Sacks et al. (1990) | 205 | 25.0 | 7.8 | 6.3 | 8.8 | – | – |
| Cournos et al. (1991) | 451 | 65.4 | 5.5 | 24.0<sup>1</sup> | 25.0<sup>1</sup> | – | – |
| Volavka et al. (1991) | 515 | 74.9 | 8.9 | – | – | – | – |
| Kelly et al. (1992) | 60 | 70.0 | – | – | – | – | – |
| Lee et al. (1992) | 135 | – | 16.3 | – | – | 13.0 | 30.0 |
| Sacks et al. (1992) | 350 | – | 7.0 | 20.0<sup>1</sup> | 48.0<sup>1</sup> | – | – |
| Empfield et al. (1993) | 209 | 97.0 | 6.4 | 6.0 | 6.8 | – | – |
| Meyer et al. (1993) | 199 | 80.4 | 4.0 | 50.0<sup>1</sup> | 20.0<sup>1</sup> | – | – |
| Susser et al. (1993) | 90 | 65.5 | 19.0 | 35.0 | 13.0 | – | – |
| Cournos et al. (1994) | 95 | 100.0 | – | – | 23.0<sup>2</sup> | 50.0<sup>2</sup> | 62.0<sup>2</sup> |
| Kalichman et al. (1994) | 97 | 81.0 | – | 4.0 | 12.0 | 44.0<sup>3</sup> | 27.0 |
| Stewart et al. (1994) | 533 | 40.5 | 5.8 | 18.0 | – | – | – |
| Susser et al. (1995) | 122 | 84.0 | – | – | 30.0<sup>2</sup> | 52.0<sup>2</sup> | 43.0<sup>2</sup> |

Note.—Dash = data not provided.

1Percent of HIV-positive participants.
2Percent of sexually active participants.
3Percent includes bought or sold sex.
Schizophrenia and Sexual Behavior

Researchers have acknowledged the significantly lower reproduction rate associated with schizophrenia, as compared to control populations (Gottesman and Erlenmeyer-Kimling 1971; Gottesman and Shields 1982; Ritsner et al. 1992; Nimgaonkar et al. 1997). Sexual disinterest or dysfunction have been attributed to both prodromal symptoms of the disorder and to postmorbid neuroleptic effects. Medication noncompliance has also been linked to patients' awareness of sexual dysfunction, thus demonstrating the importance many patients place on their sex life. Difficulty attaining or sustaining an erection, problems reaching an orgasm, and decreased interest in sex are well-known side effects of antipsychotic drugs. High rates of depression and anhedonia have also been reported among schizophrenia patients, further complicating the evaluation of sexuality.

Such symptoms as delusions, hallucinations, and social dysfunction affect the ability to sustain long-term relationships, and medication side effects may disrupt the patient's ability to perform sexually on a consistent basis; however, these problems do not necessarily eliminate the desire for sexual contact (McEvoy et al. 1983) or render the patient sexually inactive (Kelly et al. 1992). In contrast to former stereotypes about the sexuality of both females and males with schizophrenia, many of them are sexually active. Lyketsos et al. (1983), using questionnaires completed by 113 subjects with chronic schizophrenia and 104 control subjects, reported lower levels of sexual interest, fewer occurrences of intercourse, and lower levels of sexual satisfaction among individuals with schizophrenia. These figures reached significance in all groups (younger males, older males, younger females, and older females) except in older females with schizophrenia, many of whom are sexually active. Lyketsos et al. (1983), using questionnaires completed by 113 subjects with chronic schizophrenia and 104 control subjects, reported lower levels of sexual interest, fewer occurrences of intercourse, and lower levels of sexual satisfaction among individuals with schizophrenia. These figures reached significance in all groups (younger males, older males, younger females, and older females) except in older females with schizophrenia, when compared to controls. However, sexual intercourse was reported as occurring more than once a week in all schizophrenia groups. The Lyketsos study also notes that reproduction rates for Greek males with schizophrenia have increased since the introduction of neuroleptic medications. McEvoy et al. (1983) conducted indepth interviews with 23 female inpatients diagnosed with chronic schizophrenia who were receiving neuroleptic medication: 50 percent of the female participants had given birth; 78 percent expressed a desire for an active sex life; 69.5 percent stated that they would not hesitate to have sex with an attractive man; and 65 percent reported having sex within the previous 3 months. The McEvoy study notes that the majority not only had a continuing interest in sex but were sexually active.

In a study of 30 chronic mentally ill outpatients (70% with schizophrenia or other psychoses) living in Milwaukee, Kelly et al. (1992) reported that 62 percent of the patients had been sexually active during the previous 12 months; of these patients, 83 percent had had “risky” sex. Volavka et al. (1992) used a 13-item questionnaire to determine HIV risk factors among psychiatric inpatients. Based on known risk behavior, patients were categorized into either high-risk or low-risk groups. The researchers determined that the psychiatric patients were sexually active and that more than 50 percent were involved in behaviors that placed them at high risk for HIV infection.

Cournos et al. (1994) conducted face-to-face interviews with 95 inpatients and outpatients with schizophrenia according to Research Diagnostic Criteria (Spitzer et al. 1978) to determine their sexual activity. Of the 95 interviewees, 44 percent reported having been sexually active in the previous 6 months; and all activity was at high risk for HIV. McDermott et al. (1994) examined behavioral and cognitive factors relating to HIV risks between psychiatric inpatients and an unscreened control group from the emergency room of the same New Orleans hospital. Comparing the 57 percent who had a diagnosis of schizophrenia with the controls, no significant difference was found in frequency of sexual activity in a typical month. Each group reported an average of 11 sexual contacts in a typical month; however, this number decreased for individuals with schizophrenia just before hospital admission.

Susser et al. (1995) investigated the sexual behaviors of homeless mentally ill men in a New York shelter. Of the 122 male participants, 53 percent were sexually active: 45 percent reported having sex with female partners and 16 with male partners; 69 percent were diagnosed with schizophrenia or schizoaffective disorder.

Aizenberg et al. (1995) conducted a study on sexual dysfunction by comparing males with schizophrenia who were receiving neuroleptic treatment (depot form), males with schizophrenia who were drug free, and a healthy male control group. Both schizophrenia groups reported a high frequency of impairment in areas of desire, erection, and orgasm, reaching significance when compared to the control group. Both schizophrenia groups were more involved in masturbatory activity than the control group, but only the untreated group experienced a reduction in sexual thoughts. It should be noted, however, that the mean frequency of coitus, as measured on a scale of 1 to 8 (with 1 representing none and 8 representing daily), was 5.35 (standard deviation [SD] = 2.05) for the untreated schizophrenia group and 5.33 (SD = 1.85) for the treated schizophrenia group. These results indicate that males with schizophrenia experience higher rates of sexual dysfunction than controls, but they do continue to be sexually active.
Schizophrenia and Male Homosexuality

Although the number of reported AIDS cases among heterosexuals has risen dramatically in the past decade, the largest group of affected individuals continues to be men who have sex with other men (Centers for Disease Control and Prevention 1995). In listing the cumulative cases of AIDS by exposure category for the year ending 1995, the Centers for Disease Control and Prevention reported twice as many cases (259,672) for men who have sex with other men as for those infected through intravenous drug use (128,696). A further “super high-risk” group of 33,195 cases engaged in both activities. Heterosexual contact cases run a very distant third (40,037). Thus, the modal source (51%-58%) for transmitting the HIV virus continues to be male-to-male sexual activities.

Many studies have reported the prevalences of homosexual activity among inpatient, outpatient, and homeless mentally ill populations. Kalichman et al. (1994) used a structured interview of 95 chronically mentally ill patients to determine factors associated with HIV risks. Of the 95 participants, 82 percent were diagnosed with schizophrenia-related disorders. About 22 percent of the males reported having sex with other males, and 7 percent of the females reported having sex with a bisexual partner. McDermott et al. (1994) conducted a study of health beliefs related to HIV risks in psychiatric patients; they found that psychiatric patients reported substantially more homosexual acts than did the controls. Participants with schizophrenia comprised 57 percent of the study group; 22 percent of them reported homosexual activity, compared with 7 percent in the control group. Susser et al. (1993) reported that 13.3 percent of 90 male psychiatric patients in a New York City men’s shelter were involved in homosexual activities, with 45 percent of this subgroup testing HIV positive. Sacks et al. (1990) reported that 8.8 percent of 205 patients who tested positive for HIV were males who were having sex with other males, and 11.7 percent were females who had heterosexual contact with bisexual individuals. In a separate study (Sacks et al. 1992) 9.1 percent of 350 patients were males having sex with other males.

Cournos et al. (1994) found that 22 percent of 95 inpatients and outpatients with a diagnosis of schizophrenia had engaged in homosexual activities. It is interesting to note that those involved in homosexual activity did not consider themselves homosexuals; all had also been active heterosexuals. Lyketsos et al. (1983), studying the sexual adjustment of patients diagnosed with chronic schizophrenia reported that 14.1 percent of 113 participants were involved in homosexual activities. Susser et al. (1995) reported that 30.7 percent of sexually active, homeless, mentally ill males had sex with other males; individuals with schizophrenia comprised 62 percent of the subject pool, and another 7 percent had schizoaffective disorders.

Numerous reasons for the high rate of homosexual behavior in the chronically mentally ill population come to mind. Difficulty with interpersonal relationships involving the opposite sex, restrictive institutionalization, delusions, and social factors are but a few possibilities. It is not the purpose of this article to investigate the reasons for such sexual expression. It is important to note, however, that high rates of homosexual activity have been consistently reported among schizophrenia patient samples; these individuals are at the greatest risk for HIV infection.

Schizophrenia and Substance Abuse

Use of intravenous drugs, sharing needles, and having sex with intravenous drug users are recognized as major sources of HIV transmission, second only to homosexuality (Centers for Disease Control and Prevention 1995). For patients admitted to two psychiatric hospitals in New York, Cournos et al. (1991) report that "unadjusted odds ratios showed that identified drug users were almost four times as likely to be seropositive as patients without histories of injected drug use" (p. 1227). Susser et al.’s (1993) well-known shelter program found that 42 percent of the seropositive patients were intravenous drug users. In an expanded study (Susser et al. 1996) of 50 different injection drug users (56% having schizophrenia) and their controls, the great majority of users shared needles, used shooting galleries, and had unprotected sex with women and men. A study of risk factors in acute psychiatric inpatients by Sacks et al. (1990) found that of the 205 patients admitted during the survey period, 19 percent were at risk for HIV infection. Of those at risk, 41 percent tested HIV positive, 6.3 percent were intravenous drug users, and 6.3 percent said they had had sex with known drug users. This study was done in an area of Manhattan that had high HIV prevalence.

Stewart et al. (1994) sampled 533 chronically mentally ill inpatients and outpatients (40% with schizophrenia or a nonaffective psychosis) at a university-connected mental health center, finding an HIV seroprevalence rate of 36.4 percent among female intravenous drug users and 14.5 percent among male intravenous drug users. Of those who were infected with HIV, 88.9 percent reported intravenous drug use. It has been noted that females contract HIV/AIDS through intravenous drug use in higher numbers than do males, while more males contract the disease through male-to-male sexual activity. Cournos et al.
practices than individuals who are not mentally ill. In the National Institute of Mental Health (NIMH)-sponsored Epidemiologic Catchment Area (ECA) study, some 20,000 subjects in both community (93%) and institutional settings were interviewed using the NIMH Diagnostic Interview Schedule (Robins and Regier 1991). The lifetime prevalence for illicit drug use was 36.1 percent in men, 25.4 percent in women, and 30.5 percent in the total sample. The comorbidity for schizophrenia in this diagnostic group was 4.6 percent for men and 8.0 percent for women. Among those identified in the ECA study as having schizophrenia, 14 percent were polysubstance abusers and a further 31 percent abused primarily alcohol and cannabis (Cuffel et al. 1993).

The public perception of people with schizophrenia as loners who mindlessly wander the streets or as individuals locked in institutions living in their own mind-altered world would preclude such “normal” functions as sexual gratification or social relationships. As noted above, however, people with schizophrenia are sexually active and, as confirmed by the patients themselves (Test et al. 1989; Dixon et al. 1991), social acceptance and interaction are important to them. However, the ability of these individuals to discriminate between safe relationships or safe sex and those that put them at risk is compromised not only by their symptoms (McEvoy et al. 1983; Corrigan et al. 1992), but also by their mind- and mood-altering drug abuse. When people with schizophrenia put themselves at risk for HIV and other sexually transmitted diseases through use of drugs, it can be—as it often is for many in the general population—a response to a need for social contact and acceptance. As “recreational” drug use progresses to drug dependence, other risk factors are brought into play. Homelessness, trading sex for drugs or for money to buy drugs, and sex with other intravenous drug users are but a few of the HIV risks encountered within the drug culture.

Sex Trading

The reasons to trade sex for money or goods may be universal, differing little for individuals with schizophrenia, except for their delusional behaviors and extreme (transient) feelings of worthlessness, than for other individuals in the general population. Given the poverty in which many individuals with schizophrenia live and the high rates of homelessness and drug abuse associated with the disorder, they may be more susceptible to sex-trading practices than individuals who are not mentally ill.

Trading sex for money, drugs, or other goods increases the risk of HIV infection. To determine the risk of HIV infection related to these behaviors, Astemborski et al. (1994) interviewed 538 female intravenous drug users to determine the rate of drug use and frequency of sex trading practiced over a 10-year period. Once current practices were elicited, the women were categorized as no trade, low trade (1–49 partners), or high trade (≥ 50 partners). “High traders” did not differ from “no traders” in frequency of current intravenous drug use, yet the difference between the two groups in seropositive test results for HIV reached significance. No traders had a seropositive rate of 23.2 percent, whereas high traders had a rate of 47.6 percent. The difference in seropositivity between the no trade group and the “low trade” group was not significant. The authors conclude that trading sex for drugs or for money should be considered an independent HIV risk factor.

Several studies of HIV risk behavior among the mentally ill have mentioned trading sex for other commodities as a risk factor in contracting the virus. Kelly et al. (1992) found that 13 percent of 60 chronically mentally ill outpatients reported trading sex for money, drugs, or a place to stay. In reference to this and other risk factors displayed by the mentally ill, Kalichman et al. (1994) state that “[t]hese patterns of HIV risks are alarming because they occur in the context of high rates of HIV seroprevalence among psychiatric patients and the inner city areas where many patients live” (p. 221).

Susser et al. (1995), noting that their earlier study of a similar population (Susser et al. 1993) found an HIV prevalence rate of 19 percent, examined sexuality in 122 male mentally ill shelter residents, of whom 84 percent were psychotic, mostly with schizophrenia. They found that 45 percent of the sexually active males traded sex with other males for money or goods, and 55 percent traded sex with females for money or goods. In a study by Kalichman et al. (1994), 10 percent of the male mentally ill participants had traded sex for money or goods, and 27 percent of the female participants had done the same. Conversely, 42 percent of the males had given money or drugs in exchange for sex, as had 9 percent of the women. In a study focusing on schizophrenia, Cournos et al. (1994) found that 50 percent of those patients who were sexually active had traded sex for money or goods, with little difference between the genders.

Multiple Partners and Unprotected Sex

Nonmonogamous sexual relationships and unprotected sex have long been recognized as HIV risk factors in the general population. With the pervasive, though inaccurate,
notion that intercourse is an infrequent occurrence for individuals with schizophrenia, such risk factors have been neglected in this population. Several studies attest to the seriousness of the problem. In the study by Kelly et al. (1992) mentioned above, 42 percent of the men and 19 percent of the women reported having multiple sex partners. Sexually active participants also reported infrequent use of condoms. Fifteen percent of the participants reported forced or unwanted sex. The researchers found that 20 percent of the sexually active individuals met their partners on the street, in parks, or at other public places, while 18 percent met them in bars and 10 percent met sexual partners in mental health centers.

Cournos et al. (1994) noted similar results in their schizophrenia population: 62 percent of the sexually active subjects in this study reported having multiple partners. This risk factor was associated with younger age, lower-level functioning, delusions, and positive symptoms. Twelve percent had at least one partner who was HIV positive, injected drugs, or both, and condom usage was uncommon. Kalichman et al. (1994) reported that 27 percent of their subjects had sex with multiple partners; 8 percent had sex with partners who injected drugs; 7 percent had sex with partners who had a sexually transmitted infection; and 6 percent reported having sex with an HIV-positive partner. Susser et al. (1995) recorded that 52 percent of the male participants used no condoms when having sex with women, as did 60 percent who had sex with other males. Some 46 percent reported having multiple female partners and 71 percent reported having sex with a new female partner during the study period; whereas 35 percent reported having sexual relations with multiple male partners and 60 percent had sex with a new male partner during the study period. This area needs to be closely examined when planning or implementing HIV educational programs for the mentally ill.

**AIDS Awareness**

Perhaps the most alarming HIV risk factors for victims of schizophrenia are also the factors that may place them at greatest risk: their lack of accurate information and inability to comprehend the reality of the risks involved in their actions. It is the norm for research investigators to eliminate subjects from research into schizophrenia if they are unable to give truly informed consent. Even so, these individuals are in the community and are sexually active (Corrigan et al. 1992).

Among female psychiatric outpatients, Aruffo et al. (1990) found that patients with a diagnosis of schizophrenia knew significantly less about AIDS and its transmission than did patients with other diagnoses. Kalichman et al. (1994) tested patients' knowledge of AIDS through structured interviews with 95 psychiatric outpatients, 82 percent of whom had a schizophrenic disorder. The following sample questions and the percentage of incorrect responses demonstrate the problem: 37 percent of the participants believed that showering after sex can prevent you from getting AIDS; 26 percent thought that a person must have many sex partners to get the AIDS virus; and 24 percent thought that a person who got the AIDS virus from shooting-up drugs could not give the virus to someone else by having sex.

Kelly et al. (1992) studied HIV/AIDS risk behavior among chronically mentally ill patients, using a true–false format to assess AIDS knowledge; nearly 70 percent of the 60 participants had schizophrenia diagnoses. Sample questions used in this study and the percentage of subjects who answered incorrectly follow: Women can't get AIDS if they only have sex with men, 43 percent; men can't get AIDS if they only have sex with women, 38 percent; you can get the AIDS virus through one sexual contact, 15 percent; people who can give you the AIDS virus always look sick, 45 percent; washing after sex stops AIDS, 38 percent; you must have many sexual partners to get AIDS, 28 percent; only gay (homosexual) men get AIDS, 33 percent.

Many programs have been implemented to educate the public about AIDS and risk behaviors. Schools include information in their sex education programs; the media (television commercials, billboards, magazine articles, and newspapers) alert the general population to the dangers. To what degree this information gets passed on to the mentally ill population, and to what degree it is assimilated and understood are not clear. However, the cognitive deficits and disordered thought processes inherent among the symptoms of schizophrenia at various stages, as well as the lifestyles of the individuals, clearly indicate significant barriers to AIDS awareness. As Seeman et al. (1990) state “education is the only current method for preventing the spread of AIDS” (p. 765).

Practical and up-to-date information about the rapidly changing treatment of AIDS and prevention of HIV in both psychiatric patients and the general population can be readily obtained. The national AIDS Information Clearinghouse maintains a toll-free telephone number at 800-342-AIDS. The National Alliance for the Mentally Ill has introduced a Web site on the Internet (http://www.nami.org) with an index; this site's “Updates” section contains an excellent summary of the facts about HIV and AIDS, written by Dr. F. Cournos. As might be expected in the information age, the National Institutes of Health (NIH) also maintains a presence on the Internet (http://www.nih.gov/health) where the National Institute...
participants were unaware that they had the virus, leading
diagnoses, 5.3 percent. The majority of the HIV-positive
diagnoses were schizophrenia related (54 percent), but
diagnosis-specific rates of HIV were not given. Seventy-
five percent of the participants had two or more previous
hospitalizations before the index admission. The authors
noted three conclusions: The highest rates of HIV infec-
tion are among black patients (1 in every 9 black patients
tested HIV positive); women are as likely to be infected
as men (6% of the female participants tested HIV positive
than those over 40).

Cournos et al. (1991) included patients consecutively
admitted to an acute psychiatric unit in Manhattan and a
large State hospital in Queens, New York City. Of the 451
anonymous blood samples tested, 25 were confirmed posi-
tive by Western Blot. This yielded an overall HIV sero-
prevalence of 5.5 percent. The most common admission
diagnoses were schizophrenia related (54 percent), but
diagnosis-specific rates of HIV were not given. Seventy-
five percent of the participants had two or more previous
hospitalizations before the index admission. The authors
noted three conclusions: The highest rates of HIV infec-
tion are among black patients (1 in every 9 black patients
tested HIV positive); women are as likely to be infected
as men (6% of the female participants tested HIV positive
versus 5% of the males); and, paradoxically, a record of
HIV risk behavior is likely to be found in only a minority
of patients (clinicians recorded risk behavior in only 9 of
the 25 seropositive patients).

Volavka et al. (1991) reported a seroprevalence rate of
8.9 percent in a study that included 515 patients admis-
ted to a State psychiatric hospital in New York City.
Diagnoses for participants were schizophrenia, 58.9 per-
cent; bipolar disorder, 11.3 percent; schizoaffective disor-
der, 10 percent; other psychotic disorders, 6 percent; sub-
stance abuse or dependence, 4.1 percent; major depres-
sion, 2.2 percent; organic disorders, 2.2 percent; and other
diagnoses, 5.3 percent. The majority of the HIV-positive
participants were unaware that they had the virus, leading
these researchers to recommend testing as a matter of
course for all psychiatric hospital admissions.

An HIV seroprevalence rate of 7 percent was re-
ported by Sacks et al. (1992). This study of acutely ill
psychiatric inpatients in a New York facility did not report
specific diagnoses of participants. Testing the waste blood
of the participating patients, researchers found that 80 percent
of the HIV-seropositive patients whose serological status
was not recorded on admission were discharged with their
status still unrecorded and presumably undetected. Fifty-
one percent with HIV risk factors identified on admission
were also discharged with no record of their having been
serologically tested before or during hospitalization.

Lee et al. (1992) reported a seropositive rate of 16.3
percent in a study of 135 patients consecutively admitted
to the Bronx-Lebanon Hospital Center's psychiatric inpa-
tient service over a 5-month period. Discarded blood sam-
ples were anonymously tested for HIV. Based on primary
diagnoses only, patients were grouped in one of four cate-
gories: psychotic, affective, substance abuse, or miscella-
nous disorders. Seropositivity was not significant
between genders or diagnoses; however, psychotic disor-
ders did demonstrate a lower trend (7.5%) than either
affective disorders (17.1%) and substance abuse disorders
(23.7%). This inner-city hospital is located in an area of
reported severe drug abuse and AIDS problems.

Empfield et al. (1993) reported on the HIV seropreva-
ience among homeless patients admitted to a psychiatric
inpatient unit. Testing discarded blood samples from
patients who had been removed from the streets and
admitted to a New York City facility designated for the
severely mentally ill, the researchers found a seropreva-
ience of 6.4 percent. This study did not report the psychi-
atric diagnoses for its participants. The authors state that
people under age 40 were more than six times as likely to
test HIV positive than those over 40.

Susser et al. (1993) reported a seroprevalence of 19
percent among all tested psychiatric patients in a New
York City men's shelter. Sixty-six percent of the partici-
pants had a diagnosis of schizophrenia, and among those
tested (42 of 59), the positive rate was also 19 percent.
Reporting a seropositive rate of 4 percent among 199
long-stay patients, virtually all with some kind of schizo-
phrenia diagnosis in Creedmoor Psychiatric Center,
Meyer et al. (1993) (the Cournos group) concluded that
the median length of current hospital stay—38 months
with a range of 12.5 months to 615 months—was no bar-
rrier to an elevated HIV-positive rate, which was close to
the 5.2 percent found among new admissions and 6.4 per-
cent among hospitalized homeless.

Patients admitted to a Maryland State psychiatric
hospital as inpatients or outpatients were the subjects of
the HIV seroprevalence study conducted by Stewart et al. (1994). HIV testing was completed on 533 patients; 5.0 percent of men tested positive, as did 7.3 percent of women. On admission, 90 percent reported no knowledge of their HIV status. More than 4 percent of these patients tested HIV positive. All three psychotic categories had high rates of positive results: schizophrenia, 5.9 percent; bipolar disorder or major depression, 5.2 percent; and other psychotic disorder, 10.6 percent.

Conclusions

AIDS does not respect personal status, rules, or institutions. It affects the young, the old, and the newborn, the educated and the uneducated, people of all colors, the mentally healthy and the mentally ill. The behaviors that are responsible for spreading the virus are well known, but the virus remains a deadly threat, especially to high-risk groups. Groups known to be at high risk for HIV infection have been users of blood transfusions, babies born to HIV- or AIDS-infected mothers, homosexuals practicing unsafe sex, intravenous drug users, and those who engage in indiscriminate and unprotected sex.

Studies have shown that the mentally ill are at greater risk of HIV infection than the general population, as demonstrated by the high seroprevalence rates found in the studies reviewed. This risk has also been demonstrated through studies of sexual behaviors and drug-abusing practices among the mentally ill. A plurality of the participants in many of these studies have a diagnosis of schizophrenia. This population is not limited to one or two risk behaviors, but is active in many high-risk areas. Education, thought to be the first line of defense against the disease, often fails to reach the schizophrenia population. In situations where educational programs do exist, the patients may not be able to comprehend the risks involved or competently implement behavior modifications. Our goal was to clarify whether persons with schizophrenia should be considered a group at high risk for HIV and AIDS and thus in need of special attention. Our review confirms and strengthens earlier efforts to mobilize the attention of the public health community and mental health service providers to the special needs of those with major mental disorders. More accurate and valid information about the issues discussed here could be generated by waiting to "anonymize" blood samples until after a psychiatric diagnosis has been assigned to the individuals who are now treated generically as inpatients or outpatients in the available data sets.

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**Announcement**

The Sixth Congress of the World Association for Psychosocial Rehabilitation will be held at the Congress Centrum Hamburg, Hamburg, Germany, May 2-5, 1998. The conference is supported by the World Health Organization. Topics cover a wide variety of subjects in psychosocial rehabilitation of the mentally ill such as therapy, research, economics, social policy, relatives, and self-help.

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