

Psychiatric Symptoms, Risky Behavior, and HIV Infection

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INTRODUCTION

Previous work done at the Addiction and Research Center of the University of Pennsylvania and elsewhere has shown that the intensity and frequency of psychiatric symptoms is related to treatment outcome for patients with substance use disorders (McLellan et al. 1983; Rounsaville et al. 1986; 1987). These studies have found that patients with high symptom levels (high-severity patients) generally do poorly in standard, addiction-focused treatment. In contrast, patients with low to moderate symptom levels (low- or mid-severity patients) usually benefit considerably from addiction-focused treatments without the need for additional professional services. High-severity patients are typically characterized by significant levels of anxiety and depression and usually meet diagnostic criteria for other axis I psychiatric disorders, particularly mood disorders as described in the *Diagnostic and Statistical Manual of Mental Disorders*, 4th ed. (APA 1994). These patients are identified as having a dual diagnosis, and most clinicians feel that their treatment outcome can be improved by adding psychiatrically focused therapy to the addiction-focused treatment that they typically receive.

Several studies have now been completed, or are in progress, to examine the benefits that may result from adding psychiatric treatments to standard drug counseling for high-severity patients. One study examined the efficacy of supportive-expressive or cognitive-behavioral psychotherapy when added to paraprofessional drug counseling in a methadone program. The results showed that high-severity patients who received only drug counseling made few gains while those who received additional psycho-therapy made a number of significant gains that persisted even 6 months after therapy ended (Woody et al. 1983, 1987). A recently completed followup study gave similar results (Woody et al. 1995).

Other recent studies have examined the effect of imipramine with depressed alcoholic or opiate-addicted patients. In these, in contrast to most earlier antidepressant studies with addicts and alcoholics, the investigators have been careful to select patients whose depression

either predated their addiction or has been persistent (i.e., duration of 6 months or longer) in the context of the dependence. Preliminary results indicate that imipramine treatment has a significant effect on reducing the depression and a weaker, though measurable, effect on substance use (Nunes et al. 1991, this volume).

Taken together, this research indicates that psychiatrically impaired addicts and alcoholics (Mason and Kocsis 1991) can be helped in clinically meaningful ways by adding psychotherapy, pharmacotherapy, or combinations of both to addiction-focused treatments.

An additional line of research has examined the effect of axis II disorders, particularly antisocial personality disorder (ASPD), on outcome. Several of these suggest that patients with significant antisocial traits or a diagnosis of ASPD, like those with high levels of anxiety and depression, generally do poorly in treatment (Sturup 1948; Gibbens et al. 1959; Shamsie 1981). However, other studies also indicate that ASPD is a heterogeneous category (Gibbens et al. 1959) and that some patients with this disorder are much more responsive to treatment than others (Adams 1981). For example, Woody and colleagues (1985) found that a diagnosis of ASPD does not necessarily mean that treatment will be ineffective, although much of the available data and opinion argue that this disorder is generally associated with a less than optimal outcome.

These two types of psychiatric problems, general psychiatric severity and a diagnosis of ASPD, are often associated with poor judgment, impulsive behavior, higher levels of drug use, and other factors that increase the risk for human immunodeficiency virus (HIV) infection (Brooner et al. 1993; Metzger et al. 1993). Thus, they are a logical focus for studies attempting to identify individuals within an intravenous drug-using (IVDU) population who may be at particularly high risk for HIV infection. Put another way, these personal characteristics may provide information about why some addicts continue to share needles and engage in other behaviors that put them at risk for HIV infection, even when they know that these actions can have disastrous consequences.

Data from a study that this center has been conducting since 1989 indicate that there is a significant relationship between psychiatric symptoms and risky behavior among opioid addicts, showing that the intensity and frequency of psychiatric symptoms (i.e., psychiatric severity) is highly associated with continued needle sharing and other

risky behavior among opioid-dependent patients (Metzger et al. 1993). This finding is especially important because all of the subjects were receiving pre- and posttest HIV counseling about risky behaviors as part of an HIV testing protocol, and were well aware of the types of behaviors that put them at risk for HIV infection.

Another recent study examined HIV risk and seroconversion among heroin addicts with ASPD. This was also a prospective study involving injection drug users (IDUs) who were both in and out of methadone maintenance treatment. Results showed that addicts with ASPD engaged in significantly higher levels of needle sharing and other acquired immunodeficiency syndrome (AIDS) risk behaviors than those without this diagnosis. Moreover, subjects with ASPD became HIV positive (i.e., seroconverted) at significantly higher rates than those without the diagnosis (Brooner et al. 1993).

Overall, these studies indicate that the same factors that are associated with poor treatment outcome (i.e., high levels of psychiatric symptoms and ASPD) are also associated with higher levels of risky behavior and with actual infection by HIV.

PROCEDURES

New data on the association between psychiatric symptoms, risky behavior, and seroconversion are being obtained from the longitudinal study of heroin and cocaine addicts in Philadelphia discussed above (Metzger et al. 1993). This study is now in its fifth year and has had an 84 percent followup rate after 4 years, thus providing data continuously over an extended period of time.

The project began in 1989 at the Girard Medical Center in Philadelphia, the largest methadone program in Pennsylvania. Subject recruitment began with a random selection of 153 heroin addicts from among the 450 patients in the methadone program. After obtaining their informed consent, these 153 in-treatment (IT) subjects were asked to refer someone who "is just like you but who had been out of treatment for at least the last 10 months." Through this patient-referral method of recruitment, an additional 102 out-of-treatment (OT) subjects were identified, providing a total initial cohort of 255. All subjects were evaluated at baseline and every 6 months with a range of measures that included interviewer- and self-reported measures of HIV risk behavior, the Beck Depression Inventory (BDI) (Beck and Beck 1972), the Hopkins Symptom Checklist-90 (SCL-90)

(Derogatis et al. 1959), the Addiction Severity Index (ASI) (McLellan et al. 1980), and blood tests for HIV and human T-cell lymphocytotropic virus (HTLV) types I and II.

RESULTS

Retention

As noted, retention in this longitudinal study has been approximately 84 percent for the combined IT and OT cohorts over the first 48 months. Twenty-six subjects died during the first 4 years of the study from a range of conditions that included AIDS, homicide, drug overdose, pneumonia, and liver failure. Treatment course for many individuals has not been stable: Approximately half of the IT subjects have left treatment at some point, and approximately half of the OT subjects have entered treatment. The proportions of subjects in and out of treatment at each evaluation point are shown on figure 1.

Seroconversion

Seroconversion has been the highest (significantly so) among those who have remained out of treatment continuously and lowest among those who have continuously remained in treatment. Figure 2 shows that 30 percent of the OT subjects who began the study as seronegative and who remained out of treatment have seroconverted over the first 48 months. This compares with only 8 percent seroconversion among those IT subjects who began and remained in treatment. The two groups also showed marked differences in levels of risky behaviors such as drug use, needle sharing, visiting shooting galleries, and having unprotected sex. As seen in figure 2, seroconversions among those who moved in and out of treatment were found at rates that were not significantly different from those who continuously remained in treatment.

Psychiatric Symptoms

The intensity and frequency of psychiatric symptoms (i.e., psychiatric severity) was examined using the SCL-90, the BDI, and the psychiatric severity scale of the ASI. These measures were then studied in relation to treatment involvement, treatment entry, drug injection and needle sharing, and seroconversion. Similar relationships between each

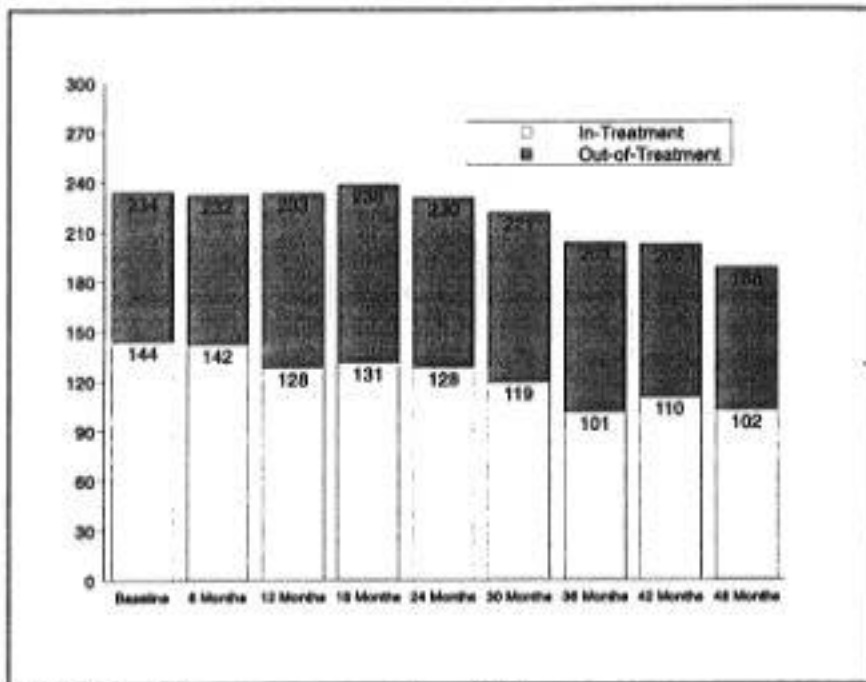


FIGURE 1. *Treatment status at time of followup.*

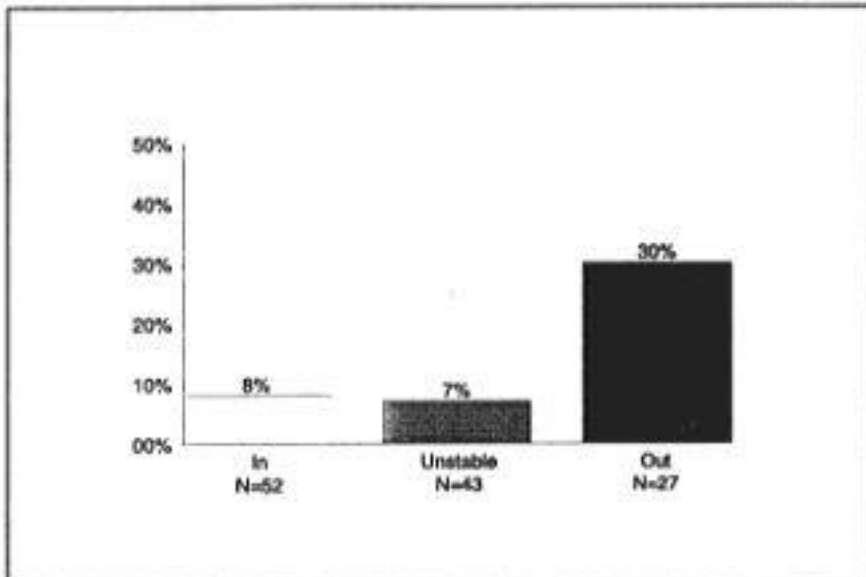


FIGURE 2. *Seroconversion by 48-month treatment patterns.*

of these domains and psychiatric symptoms were found for all measures; therefore, the SCL-90 findings will be used to demonstrate the findings.

Treatment Involvement

Patients who were in treatment had consistently higher psychiatric symptom levels than those who were out of treatment, as shown in figure 3. Psychiatric symptoms probably serve to motivate people to enter treatment because they cause discomfort that people may seek to reduce through treatment. This is consistent with other studies, in which OT substance abusers have been demonstrated to have lower levels of psychiatric symptoms than IT subjects (Rounsaville et al. 1991).

Treatment Entry

Among OT subjects, higher symptom levels were found to precede treatment entry, a finding that emerged when psychiatric symptom levels were examined at the followup point immediately preceding treatment entry among those OT subjects who subsequently entered treatment. This finding can be seen in figure 4, and it is consistent with the idea that psychiatric symptoms motivate people to enter treatment.

Injection and Needle Sharing

There was a general decline in injecting and needle sharing among both IT and OT subjects over the course of the 48 months of study, as shown in figures 5 and 6. As noted above, a subgroup continued to share needles in spite of their awareness that sharing was extremely risky behavior.

At all evaluation points, the SCL-90 scores among the injectors were higher than among those who denied injecting in the previous 6 months. These differences were significant ($p \leq 0.05$) at four of the nine evaluation points, as can be seen in figure 7. When needle sharing was examined, psychiatric symptoms were significantly higher at each of the nine evaluation points (figure 8). These findings are consistent with the idea that psychiatric severity is a significant risk factor for injecting, and especially for needle sharing—an act that is probably the single most risky behavior among these individuals.

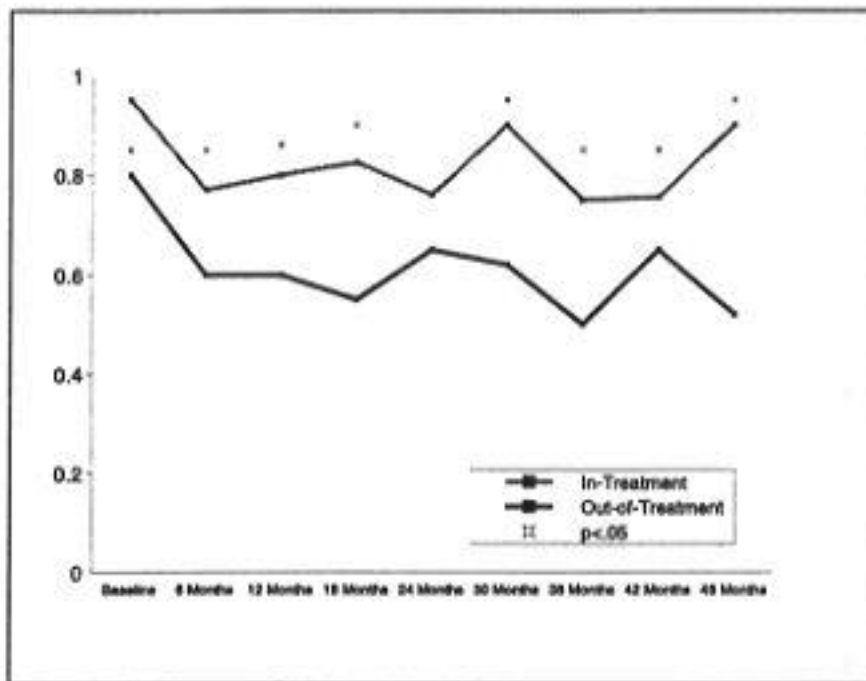


FIGURE 3. Mean SCL-90 scores by treatment status at time of followup.

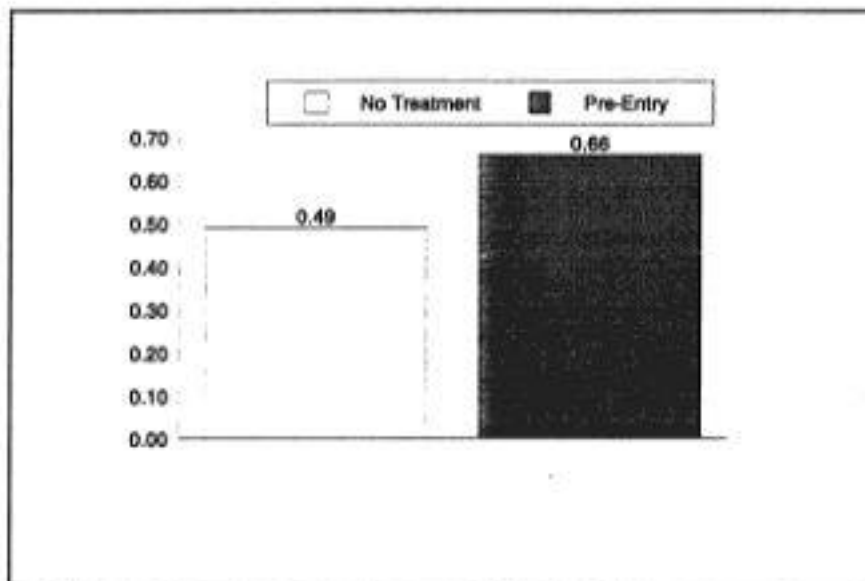


FIGURE 4. Significantly higher ($p < 0.01$) SCL-90 scores precede treatment entry among OT subjects.

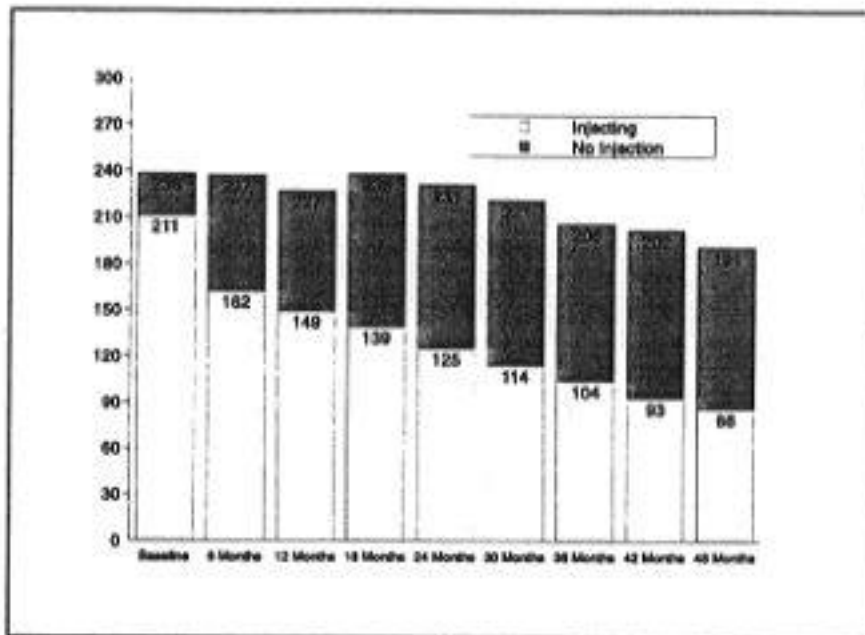


FIGURE 5. *Number of subjects injecting at followup assessment points.*

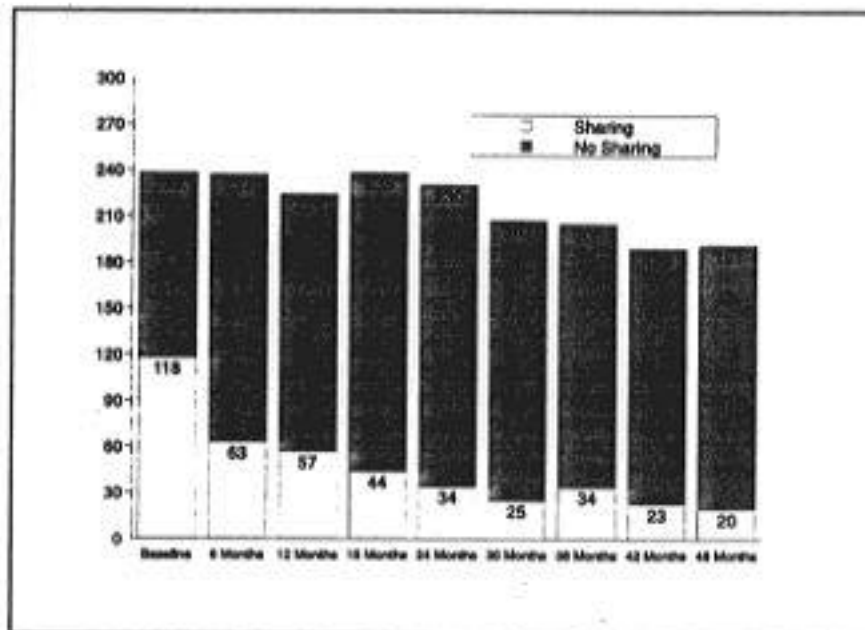


FIGURE 6. *Number of subjects sharing needles at followup assessment points.*

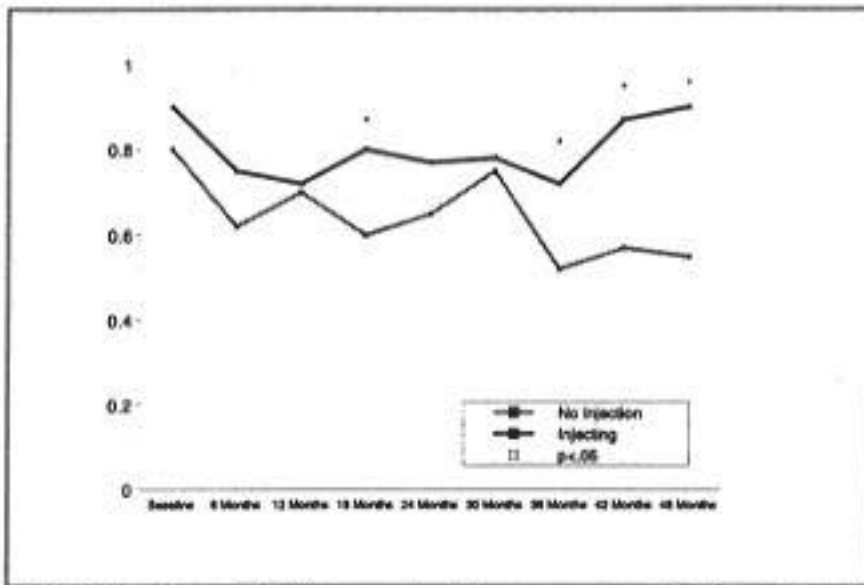


FIGURE 7. Mean SCL-90 scores by injection at time of followup.

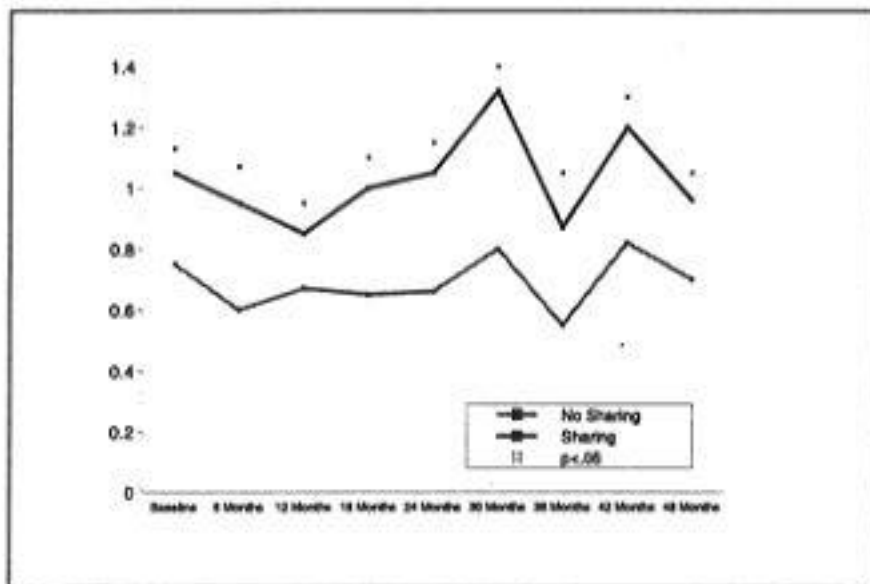


FIGURE 8. Mean SCL-90 scores by needle sharing at time of followup.

Seroconversion

Psychiatric severity scores were examined at the evaluation 6 months prior to seroconversion and compared with the SCL-90 scores at that same point for subjects who were of comparable sociodemographic background but who did not seroconvert. The results are shown in figure 9, and they demonstrate significantly higher average SCL-90 scores among those who seroconverted than among those who did not. This finding is consistent with those presented earlier, again suggesting that psychiatric symptoms serve as risk factors for injecting, sharing needles, and actual HIV infection.

Psychiatric Severity and Knowledge of Seropositivity

A final analysis was conducted to see whether learning that one has become seropositive is associated with increases in psychiatric symptoms. Subjects who tested positive at baseline were evaluated at each 6-month point over 24 months after being told of their serostatus. As shown in figure 10, those who became seropositive had higher SCL-90 scores at the time they tested positive than those who remained seronegative. Both negative and positive subjects showed gradual decreases in SCL-90 scores over the 24 months of followup, and there were no significant differences in scores between the groups.

Thus, in this group of predominantly male heroin addicts, learning about becoming seropositive was not associated with a persistent increase in psychiatric symptoms, in part because the symptom levels were already quite high. Clinical staff usually observed transient rises in symptoms immediately after subjects were informed of the positive test results; however, these episodes were brief and not associated with any long-term changes in psychiatric symptoms over the next 2 years.

SUMMARY

These data are internally consistent and lead to several conclusions, as follows:

- Elevated levels of psychiatric symptoms were found among IDUs in methadone treatment as compared to their counterparts who were out of treatment.

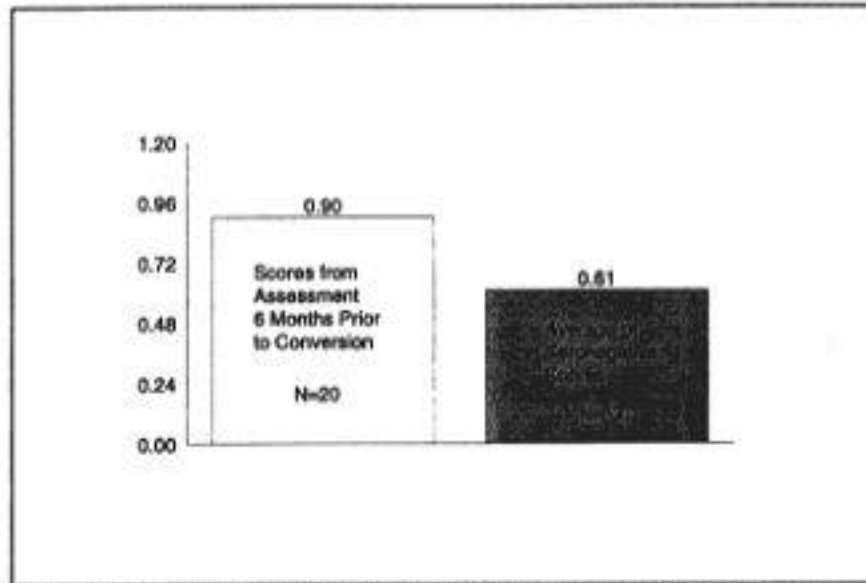


FIGURE 9. Significantly higher ($p < 0.05$) average SCL-90 scores* precede conversion.

KEY: * = African-American males

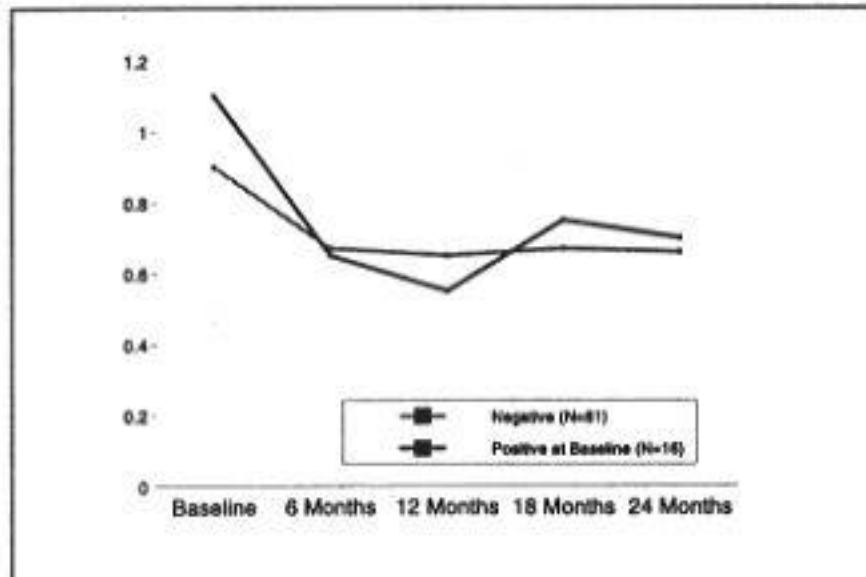


FIGURE 10. Two-year changes in average SCL-90 scores by serostatus.

- IVDUs who entered treatment had higher symptom levels than those who did not enter treatment.
- Higher symptom levels were found among injectors than noninjectors, and needle sharers had especially high psychiatric symptom levels.
- Higher symptom levels were found among those who seroconverted in the 6 months following notification, but not thereafter.
- Symptom levels did not distinguish between HIV-positive and HIV-negative individuals 24 months following notification of seropositivity.

Taken together, these findings indicate that elevated psychiatric symptoms are risk factors for continued high risk behavior, as well as for seroconversion. The data add to those of Brooner and colleagues (1993), who demonstrated that ASPD serves as a risk factor for HIV infection. The fact that antisocial personality disorder and psychiatric severity are associated with risky behavior and with actual HIV infection further expands earlier findings showing that these two factors are associated with poorer treatment outcome. Other axis II disorders (e.g., borderline or narcissistic), as well as other axis I disorders with high symptom levels that were not well represented in these studies (schizophrenia, manic depressive illness), may also show similar elevated rates of risky behavior and seroconversion, although there is a scarcity of data currently available to assess the risk behavior of these patients.

The evidence from treatment studies that psychiatrically focused therapies, when combined with substance abuse treatment, can improve overall outcome for patients with clinically significant levels of psychiatric symptoms may be relevant in the design of future risk reduction efforts. That is, these treatment outcome studies may serve as a starting point for exploring the feasibility and efficacy of using psychiatrically focused treatment to reduce risky behavior and HIV infection among psychiatrically symptomatic IDUs.

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