INFORMATION TO USERS

This manuscript has been reproduced from the microfilm master. UMI films the text directly from the original or copy submitted. Thus, some thesis and dissertation copies are in typewriter face, while others may be from any type of computer printer.

The quality of this reproduction is dependent upon the quality of the copy submitted. Broken or indistinct print, colored or poor quality illustrations and photographs, print bleedthrough, substandard margins, and improper alignment can adversely affect reproduction.

In the unlikely event that the author did not send UMI a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.

Oversize materials (e.g., maps, drawings, charts) are reproduced by sectioning the original, beginning at the upper left-hand corner and continuing from left to right in equal sections with small overlaps.

Photographs included in the original manuscript have been reproduced xerographically in this copy. Higher quality 6" x 9" black and white photographic prints are available for any photographs or illustrations appearing in this copy for an additional charge. Contact UMI directly to order.

Bell & Howell Information and Learning
300 North Zeeb Road, Ann Arbor, MI 48106-1346 USA
800-521-0600

UMI®

A

THE ROLE OF ANTISOCIAL PERSONALITY DISORDER IN THE TREATMENT OF DEPRESSED, METHADONE-MAINTAINED HEROIN ADDICTS

by

Laurie A. Weber

A dissertation submitted to the Graduate Faculty in Psychology in partial fulfillment of the requirements for the degree of Doctor of Philosophy, The City University of New York

2000

This manuscript has been read and accepted by the Graduate Faculty in Psychology in satisfaction of the dissertation requirement for the degree of Doctor of Philosophy.

9/14/00
Date

Paul Wachtel, Ph.D.
Chair, Examining Committee

9/14/00
Date

Joseph Glick, Ph.D.
Executive Officer

Diana Diamond, Ph.D
Katherine Oram, Ph.D.
Edward Nunes, M.D.
Charles Winick, Ph.D.

Supervisory Committee

THE CITY UNIVERSITY OF NEW YORK

ABSTRACT

THE ROLE OF ANTISOCIAL PERSONALITY DISORDER IN THE TREATMENT OF DEPRESSED, METHADONE-MAINTAINED HEROIN ADDICTS

By

Laurie A. Weber

Advisor: Paul Wachtel, Ph.D.

The aim of the present study was to compare two different measures of antisocial personality disorder (APD), one trait-based and one behavior-based, in a methadone-maintained, depressed, heroin addict population. The relationship between sociopathy and treatment may go undetected in research that assesses sociopathy in a dichotomous, present/absent manner such as the DSM-III-R, but may be discernable using a more continuous measure such as the California Personality Inventory – Sociability subscale (CPI-So). The CPI-So is a short, self-report instrument that provides a continuous measurement of an individual's socialization, from normative to pathological, and looks primarily at traits associated with APD.

It was the hope of the present study to show that a trait-based measure, the CPI-So, provides greater predictability of demographic differences, baseline severity and treatment outcome than a behavior-based assessment such as a DSM-III-R diagnosis of APD. As hypothesized, the present study found no correlation between a behavior-based measure such as a DSM-III-R diagnosis of APD and demographic differences, baseline severity or treatment outcome. Contrary to the hypothesis of the present study, however, knowing about

an addict's antisocial traits, as measured by the CPI-So, did not predict demographic differences, baseline severity or treatment outcome either.

One important finding was that, as hypothesized, men and women can look the same when APD is assessed using a trait-based measure and very different when using DSM-III-R diagnostic criteria. Another interesting, but unexpected, finding was that almost the entire population appeared to be antisocial through the lens of the CPI-So, while fewer individuals than the literature would predict were antisocial according to the DSM-III-R. This lack of range in CPI-So scores may have contributed to an absence of findings regarding its predictive utility. The results do point to an underlying character disorder in the study population, however, which may be more important in understanding substance abuse and designing appropriate treatments than looking at an addict's illegal acts.

ACKNOWLEDGEMENTS

I thank the members of my dissertation committee. Paul Wachtel is an extraordinary dissertation chair; providing just the right mix of helpful feedback and encouragement, he actually made the process enjoyable. Ned Nunes is a mentor, in particular throughout my five years working with him at the New York State Psychiatric Institute, culminating in his invaluable assistance with my dissertation. Diana Diamond's wonderful classes provided me with an incubator for the ideas that became my dissertation. Kate Oram has been a friend since my first days at City, and I am grateful for her warm support and clinical acumen. Charles Winick nurtured my academic interest in substance abuse and provided great encouragement along the way.

I am filled with gratitude for my mother, Barbara Weber, whose unwavering support allowed me to pursue my passion. I thank my dissertation group, Annette Demichele, Liz Gertner, Hilary Levine, Skye Wilson and Lauren Young. This amazing group of women provided unlimited support, love and assistance. I thank Natalie Fisher, Jennifer Gerber, Melissa Ritter and Lisa Samstag. Each of these women provided me with guidance and support during the dissertation process and throughout graduate school that I appreciate more than words can say. I thank Donya Rhett, a loving and supportive friend from the beginning. I thank Bob Lieb, whose wisdom and support I have relied on for 25 years, and Diana Hassel, who went through graduate school with me. I thank Sherri Levine, who is always there for me.

Finally, I dedicate this dissertation to Liz Gertner, Skye Wilson and Lauren Young; the gift of their friendship has been the unexpected reward of graduate school. I also dedicate this dissertation to the memory of my father, Joseph Weber, and the

memory of my brother, Jeffrey Weber. It is my hope that the passion I feel about my work honors their lives in the best way possible.

TABLE OF CONTENTS

LIST OF TABLES

INTRODUCTION

"We know ourselves to be faithless, selfish, competitive, cruel, glad of our friend's failures, pleasure-seeking and so secretly lecherous that we can hardly get through an afternoon, while our entire social life depends on the pretense that we are congenial, social, love to share, and just like the way our friend's wife looks in that dress."

-Adam Gopnik, *The New Yorker*, May 18, 1998

In 1992, it was reported that about 1.9 million Americans have tried heroin and more than four-fifths of them are age 26 or older. Currently, it is estimated that there are 600,000 opiate addicts in the United States, of which 115,000 are being treated with methadone maintenance. (Payte & Zweben, 1998). New York City, with more heroin users than any other city, approximately 200,000 as reported in *The New York Times* recently (Wren, 1999), has twice as many users as Los Angeles, the second-ranked city. (Winick, 1992). Given heroin's ubiquitous position in New York City life, it comes as no surprise that heroin addiction and methadone maintenance have been featured prominently in local news stories recently. In 1995, *The New York Times* (Alvarez, 1995) reported that rehabilitation centers and hospitals around the city were treating a growing number of professionals and college students for heroin addiction and witnessing a steady increase in heroin overdoses. On July 20, 1998, New York's Mayor, Rudolph Guiliani, shocked the drug treatment community by stating during a speech on expanding the welfare to workfare program that he wanted to do away with methadone maintenance all together. (Swarns, 1998). During this speech, Guiliani criticized methadone maintenance for replacing a dependency on heroin with a dependency on methadone. The drug treatment and health care community immediately and universally condemned Guiliani's proposal.

Don C. Des Jarlais, the director of research for the Chemical Dependency Institute of Beth Israel Medical Center and an expert on heroin addiction, expressed disbelief. "From a public health standpoint that has to be one of the more ridiculous things for any public official to have said over the last 30 years." (Swarns, 1998).

Plenty of proof exists to refute the Mayor's position on methadone maintenance. A recent federal government study of 700 people entering methadone clinics found that methadone substantially reduced heroin use as well as illegal activities associated with drug use. Methadone programs have also been shown to curb rates of HIV infection significantly. (National Consensus Development Panel on Effective Medical Treatment of Opiate Addiction, 1998). More tellingly, recent studies also reveal that 80% of those leaving methadone programs returned to IV-drug use within a year. In fact, repeated studies indicate that only 10% to 20% of patients who discontinue methadone are able to remain abstinent. (Payte & Zweben, 1998). For example, Kosten (1986, p. 733) in his comprehensive follow-up study of opiate addicts, found that opiate addicts who were only detoxified and received no further treatment had a poorer outcome and were more likely to relapse to drug abuse than were those who remained in drug treatment two and a half years later. The *Journal of the American Medical Association* recently reported that, "One of the most striking examples of the effectiveness of methadone was that the death rate of those who received treatment was 30% of those who did not." (National Consensus Development Panel on Effective Medical Treatment of Opiate Addiction, 1998).

On January 16, 1999, *The New York Times* (Swarns) reported that Mayor Guiliani had abandoned his plans to move all 2,100 heroin addicts at city hospitals

into abstinence programs. This news came after the five-month New York City experiment resulted in only 21 addicts giving up methadone, with five of those 21 having already relapsed into heroin use. So, what prompted Guiliani's condemnation of a well-established and proven treatment for heroin addiction, and his taking of a position so untenable that he was forced to retreat from it just five months after attempting to implement abstinence programs? On some level, Guiliani was probably responding to the impression that most addicts on methadone maintenance don't function very well even if their opiate addictions are being treated successfully. For example, according to New York State Office of Alcoholism and Substance Abuse Services (1997) figures, 62% of methadone patients rely on public assistance and only 10% of all methadone patients derive their income mainly from wages or salary. Guiliani chose to answer the question, "If methadone maintenance is such a stabilizing force in heroin addiction, why is the population as a whole so low-functioning?" by blaming methadone maintenance itself.

The answer to this question more likely lies with the fact that heroin addiction is not a unitary phenomenon. Most methadone patients come from disadvantaged backgrounds, are poorly educated, have spotty work records, and are physically or psychologically impaired. (New York State Office of Alcoholism and Substance Abuse Services, 1997). Johnson and Muffler (1992) attribute part of the current drug problem to socioeconomic forces in American society during the 1980s that significantly worsened living standards for poor people, especially in the inner cities. Inner-city neighborhoods, in their view, have become major reservoirs of people with numerous social problems and severe social deficits. Moreover, researchers

acknowledge that a single "addict" typology, which was once thought to be homogenous among opioid populations, has evolved into multiple classifications and substance use patterns. Further, treating heroin abuse is difficult at best. For example, 50% of heroin addicts drop out of psychotherapy within the first three weeks of treatment. (Stark & Campbell, 1988). Consequently, condemning methadone maintenance without also considering the complicating psychosocial and psychiatric factors in an addict's life is only looking at half the picture.

For the past five years, I have been working with a group of researchers at The New York State Psychiatric Institute that is trying to improve the day-to-day functioning of patients on methadone maintenance by focusing on their concurrent psychiatric disorders. Specifically, we have been looking at whether antidepressant medication can concomitantly reduce both depression and cravings for illicit drugs in methadone-maintained heroin addicts. The research study invites patients at two methadone clinics who meet The Diagnostic and Statistical Manual of Mental Disorders (DSM)-III-R criteria for current major depression or dysthymia and are currently using illicit drugs to participate in a 12-week trial of sertraline (trade name Zoloft). The quid pro quo for their participation is free psychiatric treatment during and at the end of the study by a leading substance abuse psychiatrist, and more importantly, a chance to feel better.

This medication study attempts to address two problems prevalent in methadone maintenance populations. Depression is one of the most common comorbid psychiatric disorders among drug abusers. Five studies (Khantzian & Treece, 1985; Rounsaville, Weissman, Crits-Christoph, Wilber & Kleber, 1982,

Woody et al., 1984; Woody, McLellan, Luborsky & O'Brien, 1983; Woody, O'Brien, McLellan, Marcovici & Evans, 1982) report lifetime prevalence of major depression among methadone maintained heroin addicts as ranging from 32% to 54%, which substantially exceeds the prevalence in the general population, according to the ECA. (Regier et al., 1990). The results of the ECA study confirm these figures for increased risk of depression found among individuals with drug abuse/dependence. (Regier et al.). Continuing drug and alcohol abuse is another problem that plagues methadone maintenance treatment. This is despite the fact that methadone maintenance has been shown to reduce significantly cravings for opiates as well as to eliminate the withdrawal symptoms associated with opiate addiction. (Payte & Zweben, 1998). Often, methadone-maintained heroin addicts abuse alcohol, cocaine and crack, benzodiazepines and heroin. (Kosten, Rounsaville & Kleber, 1987). Johnson and Muffler (1992) report that a sizable proportion of crack abusers are heroin injectors, and Leal, Ziedonis and Kosten (1994) note that close to 80% of patients entering methadone maintenance are cocaine abusers.

This dissertation grows out of my experiences with this patient population during the study. I screened all participants in the study, conducted independent ratings, administered self-report forms and scheduled their weekly appointments. In short, my interactions with the patients in the study were numerous and frequent. What I began to realize was that although the study requirements were minimal, and despite the fact that we were essentially offering free, top-notch psychiatric treatment for a clearly diagnosable disorder, many patients were unable to avail themselves of the services offered. I started to wonder if there was some other "hidden" factor

affecting a patient's ability to make a useful connection to our research study, and what differences, if any, exist between patients who were able to make this connection and those who were not.

I began to think that the answer might lie in the make-up of their character, specifically about whether elements of antisocial personality disorder (APD) are present in individuals who had a more difficult time connecting to and benefiting from the research study. Antisocial personality is the character disorder most often comorbid with substance abuse (Brooner, King, Kidorf, Schmidt & Bigelow, 1997; Regier et al., 1990), and two different methods of assessment for APD were given to each sertraline study subject. I began to review the literature on APD, however, and saw that large parts of it describe individuals who bear no resemblance to the drug addict population that I work with. This is despite the fact that substance abuse and APD are often comorbid, and it can be quite difficult to make a differential diagnosis between drug seeking behavior and antisocial features.

For example, a recent issue of *The New Yorker* (Stewart, 1997) profiled a physician named Michael Swango, possibly one of the most prolific serial killers in American history. Dr. Swango had poisoned numerous patients during his medical training and practice, most of whom he had no relationship with, primarily because he enjoyed watching the poison take effect on his victims. Although the article's main purpose was to chronicle the reluctance of medical institutions to admit wrongdoing by one of their own, the piece also painted a compelling picture of Dr. Swango as a classic sociopathic personality -- someone with a violent, aggressive and dominating inner core masked by a non-anxious, guilt-free, "smooth operator" demeanor who was repeatedly

able to talk his way into medical settings despite growing evidence of his crimes. Contrast this picture with the typical drug addict seeking treatment at a methadone clinic. He is likely to be poorly groomed, withdrawn, impatient, prone to lying, alexithymic, have many arrests, but rarely for violent offenses, have a spotty work history, and be poorly educated. Both the drug addicts and Dr. Swango, nonetheless, would be given the diagnosis of APD according to the DSM-IV.

APD is currently defined by the DSM-IV as "a pervasive pattern of disregard for, and violation of the rights of others that begins in childhood or early adolescence and continues into adulthood." (DSM-IV, 1994). The diagnosis of APD is marked by a history of continuous and chronic antisocial behavior with onset before the age of 15 and the absence of symptoms of severe mental retardation, schizophrenia, schizoaffective or manic disorder. (Rainer, 1979, p. 7). Stone (1993) notes that the study of APD can be difficult because "patients exhibiting severe and socially offensive traits are often at pains to hide these traits from the diagnostician." (Stone, p. 299). In general, genetic, constitutional, familial, sociological, cultural, biological, neurological, and psychodynamic factors have been implicated in the causation and development of APD. (Modlin, 1983). Researchers such as DeJong, van den Brink, Harteveld and van der Wielen (1993) have noted that it is difficult to separate the chronic behavior pattern of a "junkie" – which includes lying, criminal acts, manipulation, lack of responsibility, egocentricity, feelings of superiority, exaggeration in the expression of emotions, lack of real emotionality and rapid shifts of emotional states – from long-term behaviors or traits characteristic of preexisting personality disorders, such as APD.

Over time, I observed that, despite anecdotal evidence of the presence of APD, few patients were meeting the DSM-III-R criteria for the diagnosis as measured by an extensive structured interview (SCID-SAC). This may be because patients are often reluctant to disclose their deviant behaviors or because the diagnosis itself does not adequately capture what feels antisocial about their character. I began to wonder if the other study gauge of APD, the California Personality Inventory – Sociability subscale (CPI-So), was a more relevant and useful tool. This short, self-report instrument provides a continuous measurement of an individual's socialization, social judgment and normative behaviors, and lower scale scores are highly correlated with antisociality. (Tourian et al., 1997).

The aim of this dissertation is to explore the relationship between tendencies toward sociopathy and various outcomes measures in an antidepressant medication study. This relationship between sociopathy and treatment may go undetected in research that assesses sociopathy in a dichotomous, present/absent manner such as the DSM-III-R, but may be discernable using a more continuous measure that can detect differences in the lower end of the scale. Researchers such as Cooney, Kadden and Litt (1990, p. 42) have noted, "One problem with a categorical approach to sociopathy is that, like other dispositional attributes, it is considered by some to be a continuous variable and the use of categorical measures fails to capture the continuous nature of the attribute." I am also interested in the differences in prognostic value between a measure such as the CPI-So, which looks primarily at *traits* associated with APD and the SCID-SAC, which measures *behaviors* associated

with APD, as well as which measure better correlates with a patient's inability to avail him or herself of the treatment offered by the study.

LITERATURE REVIEW

COMORBIDITY OF OPIATE ADDICTION AND PSYCHIATRIC PROBLEMS

In 1981 Rounsaville et al. noted the gap between clinical psychiatry and opiate addiction, reporting that few studies had examined psychiatric diagnoses in opiate addicts. Research in recent years has closed that gap somewhat, as clinicians have recognized that, "perhaps more than any other psychiatric ailment, substance abuse is characterized by the coexistence of other psychiatric illnesses that complicate the patient's course and treatment." (Dinwiddie, Reich & Cloninger, 1992, p. 364). Rounsaville et al. (1981), for example, found that in a sample of opiate addicts seeking treatment, 80% met the criteria for a lifetime diagnosis in a category other than drug abuse. Other studies have indicated a strong association between heroin use and psychopathology. (Darke, Swift & Hall, 1994). Nace and Davis (1993) note that personality disorders have been diagnosed in 65% of narcotic-addicted subjects. In addition, research looking at opiate users generally and those specifically restricted to methadone maintenance have found similar patterns of psychopathology. Limbeek, Wouters, Kaplan, Geerlings and Alem (1992) report 57% of their sample of methadone maintenance clients as qualifying for a lifetime psychiatric diagnosis other than drug abuse or dependence. Strain, Brooner and Bigelow (1991) report a figure of 47%, which matches the percentage obtained by Brooner et al. (1997) in their recent assessment of rates of comorbidity among 716 heroin addicts in methadone maintenance treatment. Notably, no significant demographic differences between the comorbid and none group were found in Brooner's sample, except the comorbid group had significantly less

education. The average years of education in both groups were below 12 years, however, and the substantial majority of both groups were unemployed and unmarried. (Brooner et al.).

Darke et al. (1994) point out that the high prevalence of psychopathology among heroin users is relevant to treatment providers for several reasons. First, it has been reported that patients with higher levels of global psychopathology respond more poorly to treatment. Second, psychopathology is associated with high levels of HIV risk. (Brooner, Herbst, Schmidt, Bigelow & Costa, 1993). Third, opioid treatment appears to ameliorate psychopathology among opioid dependent patients. R.D. Weiss, Mirin and Griffin (1992, p. 179), who have reviewed many existing treatment studies comment that, "Several studies have shown that identification and treatment of specific coexisting psychiatric disorders in substance abusers can improve overall prognosis." Rutherford, Cacciola and Alterman (1994) looked at personality disorders in 179 methadone-maintained opiate addicts and drew similar conclusions. They found that patients with the most severe substance abuse problems and additional psychopathology have poorer treatment response during treatment, and are more likely to relapse and relapse faster than patients with lower levels of substance dependence and a lesser degree of psychopathology at the start.

Mirin, Weiss and Michael (1988) caution, however, that diagnosis of psychopathology in substance abuse populations is complicated by the fact that:

> For each patient the presence and intensity of the presenting symptomatology is affected not only by physiological factors, but by the adequacy of ego defenses, the availability of external supports, and the sociocultural context in which the signs and symptoms develop. In addition, since many patients who present for treatment have experienced multiple episodes of prolonged drug use it is often difficult

> to discern the precise causal relationship between substance abuse and concurrent nondrug psychopathology. (Mirin et al., p. 141).

Rounsavaille, Cacciola, Weissman and Kleber's research (1981) established that major depression, alcoholism and APD are the most prevalent and most reliably detected psychopathology among opiate addicts. They also found that despite the presence of psychiatric comorbidity, addicts do not generally seek treatment due to psychological disturbances; instead they seek treatment because of their substance abuse problems. Conversely, Marlatt and George (1984) have noted that situational temptations to use drugs often include both a negative emotional state such as depression and a life crisis such as a family argument. Kosten, Rounsaville and Kleber (1986), in their comprehensive follow-up survey of opiate addicts two and a half years after they had entered treatment, determined that many opiate addicts maintain very high levels of life crises, and that those addicts who continue to abuse drugs have significantly more life crises than those who remain abstinent. Further, they have found that a high rate of life crises interacts with not receiving treatment and with depression in maintaining addictions. (Kosten et al., p. 738.)

In reviewing the literature on personality disorders and substance abuse in 1996, Cacciola, Rutherford, Alterman, McKay and Snider found that only four studies had examined the relationship of personality disorders other than APD to treatment outcome in substance abusers. Cacciola et al. observed that in general substance abuse patients with personality disorders have a more problematic history and admission status than patients without personality disorders do. These more serious problems tend to span drug and alcohol use as well as psychosocial functioning.

Brooner et al. (1997), in their recent study of rates of psychiatric comorbidity among opiate addicts in methadone maintenance treatment mentioned above, found that the rate of current comorbidity was 39% with most cases involving personality disorders. In addition, women in their sample were more likely to have Axis I disorders and men were more likely to have personality disorders. Expected differences for specific diagnoses were found, however; women were less likely than men to have APD but seven times more likely to have borderline personality disorder. (Brooner et al., p. 72).

Rutherford, Cacciola and Alterman (1994) assessed 179 male methadone-maintained heroin addicts to determine the prevalence of personality disorders in this population. They found that the prevalence of any one personality disorder is less than 5% except for borderline personality disorder and APD. They also noted that 80% of Caucasian addicts in the sample met criteria for any personality disorder compared to 58.5% of African Americans and 57.1% of Hispanics. The subjects with personality disorders were significantly older and reported significantly more prior drug treatments than subjects with no personality disorders. Addicts in the sample with any personality disorder were significantly more likely to be currently depressed or dysthymic. In addition, panic disorders, social phobias, and other drug and alcohol dependence were also more common in subjects who had a personality disorder. (Rutherford et al.).

Rutherford et al. (1994) also found no significant difference among the personality disorder clusters on a measure of addiction severity, which assesses patient functioning in seven key areas. They cite other recent research, however, which found that substance abusers with a Cluster C personality disorder (fearful and/or anxious)

were less likely than substance abusers with a Cluster A (odd or eccentric) personality disorder or Cluster B (dramatic/emotionally labile) personality disorder to relapse within three months of completing treatment.

DeJong et al. (1993) assessed 86 polydrug addicts, almost all of whom were opioid-dependent, three weeks after admission to hospitalized treatment for substance abuse. After administering a structured interview for DSM-III personality disorders, they determined that 91% of the patients met criteria for at least one personality disorder and the average number of personality disorders per patient was four. The most common personality disorders were borderline (65%), histrionic (64%), passive-aggressive (49%), antisocial (48%), schizotypal (41%), and dependent (35%). No single type of addictive personality emerged, but Cluster B personality disorders were more common than others were.

In 1996 Cacciola et al. looked at the relationship between personality disorders and treatment outcome in 197 men admitted to methadone maintenance treatment. They discovered that subjects with personality disorders, regardless of whether the personality disorder was APD, improved in a number of areas with methadone maintenance treatment. At the seven-month follow-up, however, fewer subjects with personality disorders remained in treatment, and those with APD left at the highest rate. (Cacciola et al., p. 237). Cacciola et al.'s study determined that Cluster B personality disorders (erratic and dramatic) are risk factors for poorer outcomes.

In the same study, Cacciola et al. (1996) also compared the predictive power of a personality disorder diagnosis to that of the Addiction Severity Index (ASI), a widely-used research instrument that measures baseline and follow-up severity in a number of

areas of an addict's life, including medical, employment, alcohol, family/social, and psychiatric. Although they determined that a personality disorder diagnosis accounted for up to 14% of the variance in predicting outcome in any one problem area, as measured by the ASI, this figure was less than the predictive power of baseline scores on the ASI in the same area. McLellan (1986) has also shown that the pretreatment psychiatric severity scale of the ASI is a much more robust predictor of treatment outcome than pretreatment substance abuse severity. His extensive research with the ASI indicated that in every case, greater pretreatment psychiatric severity was related to poorer six-month outcome, and this variable alone accounted for an average of 10% of the outcome variance across the seven criteria of the ASI. (McLellan, p. 106). According to McLellan and Cacciola et al.'s (1996) work it appears that obtaining a specific diagnosis of psychopathology may have less predictive power than a baseline measure of global psychiatric severity.

Based on the above-mentioned findings Cacciola et al. (1996) have suggested, therefore, that it might be more useful to consider Axis I and II diagnoses together to get a better picture of the relationship between psychopathology and outcome in any individual patient. Multiple psychiatric diagnoses are common in substance abuse populations. As mentioned-above, Brooner et al. (1997) found that 47% of their sample of 716 methadone maintenance patients had a lifetime psychiatric diagnosis other than substance use disorders. Among those with psychiatric comorbidity, 61.5% had one diagnosis, 21.8% had two diagnoses and 16.7% had three or more diagnoses. Nace and Davis (1993) assessed 100 inpatients admitted to a substance abuse program for

personality disorders and found that 57% had at least one personality disorder and of that 57%, 44% also had an Axis I diagnosis such as major depression or dysthymia.

In a sample drawn from 1,162 relatives of hospitalized alcoholics, felons, and control subjects, Dinwiddie et al. (1992) compared intravenous drug users to subjects who used no illicit drugs, cannabis users, and subjects who had used psychoactive drugs other than cannabis more than five times but had never injected drugs ("other drug users"). They found that rates of alcoholism, depression, and APD, but not other psychiatric disorders (other than drug dependence), were significantly elevated in intravenous drug users. For diagnoses of alcoholism and major depression, however, there was little difference between other drug users and those who had injected drugs. Dinwiddie et al. concluded that the major distinction between intravenous drug users and other drug users appeared to be related to the much higher prevalence of APD among intravenous drugs users, suggesting that the decision of whether or not to inject may be related to the presence of antisocial traits within the individual. (Dinwiddie et al., p. 368). In fact, they found that 27% of subjects diagnosed with APD reported injecting drugs, whereas 68% of intravenous drug users were diagnosed as having APD.

Upon further analyses of his sample, Dinwiddie et al. (1992) determined that the relationship between APD and drug injection is not due solely to drug-related antisocial behavior (e.g. committing crimes to pay for drugs) because on average intravenous drug users began significant drug use between 16 and 18 whereas to meet diagnostic criteria for APD, certain kinds of antisocial behavior must be present before the age of 15. They cited Cloninger's proposal that intravenous drug users are likely to have personalities that could be characterized as high in novelty seeking and low in harm avoidance.

Dinwiddie et al. concluded that these personality traits increase the likelihood of drug experimentation, and make one less likely to avoid other potentially risky situations or practices in addition to drug abuse, less able to learn from experience and less able to change one's behavior in response to social demands. (Dinwiddie et al., p. 368).

Although there does not seem to be a clear-cut MMPI profile for opiate addicts, there are consistent reports of significant elevations on the psychopathic deviate and depression scales across a wide range of ages, classes and cultural groups. (Craig, 1979a and 1979b). Continued opiate use does not seem to worsen psychopathology generally. McLellan, Woody and O'Brien (1979) found that individuals who continue to abuse opiates over a six-year period had no significant increase on any MMPI scale or any systematic change in psychological status as assessed in clinical interviews. There were, however, some moderate increases in depression. A recent study by Donovan, Soldz, Kelley and Penk (1998) using a statistical technique called Discriminant Function Analysis attempted to discern more detailed differences on the MMPI among groups of substance abusers, including cocaine and opiate addicts, polydrug abusers, and alcoholics. A key finding of the study distinguished heroin addicts from the other groups in that they are both depressed *and* hostilely alienated. Anger and irritability are temperamental traits that have been associated with increased risk for drug abuse in longitudinal studies. (Martin et al., 1994).

Blatt, Berman et al. (1984) gave 99 opiate addicts a battery of projective measures in order to determine their dynamic profile, if any. The results indicated that a primary disturbance in opiate addicts appears to be their relative inability to conceptualize people as well differentiated, articulated, and involved in meaningful,

purposeful and constructive activity. In addition, opiate addicts appear to have greater affective liability. (Blatt, Berman et al., p. 163). Overall, Blatt, Berman et al. determined that the difficulties in interpersonal relations and affect modulation of the heroin addicts he assessed place them in the neurotic range of functioning. Further, their study suggested that opiate addicts have a particularly untoward, self-destructive, isolated mode of adaptation for achieving the satisfactions and pleasures most people seek in intimate relationships. Confirming this, researchers such as Johnson and Muffler (1992) have observed that many drug addicts suffer from severe "disaffiliation" from and frequently ruptured ties with family, kin, friends and community organizations that would usually provide help. Blatt, Berman et al. concluded that the typical addict is "emotionally immature, with a strong tendency to act upon primitive impulses and drives because of a lack of effective and stable defenses." (Blatt, Berman et al., p. 157). They categorized the addicts in their study as depressed with feelings of low self-esteem and a lack of nurturance and/or sociopathic with a need for immediate gratification and poor impulse control.

Rounsaville, Kosten, Weissman and Kleber (1986) looked at the prognostic significance of psychopathology in treated opiate addicts, as part of the two and a half-year follow-up study of 361 opiate addicts they conducted with Kosten (see above). They found that overall psychiatric severity ratings at baseline were as predictive of poorer functioning in the areas of illicit drug use and occupational functioning at follow-up as were specific psychiatric diagnoses. Controlling for overall psychiatric severity, however, the only diagnosis that remained significantly

related to treatment outcome was major depression, suggesting that, prognostically, a global underlying severity dimension accounts for the other diagnoses.

The preceding survey of the literature on psychiatric comorbidity in opiate addicts highlights how pervasive non-substance abuse pathology, particularly depression and APD, is in this population as well as its negative effect on severity of substance abuse disorders and treatment outcome. What remains uncertain, however, is what the contributions are of obtaining specific diagnoses in treating outpatient methadone maintenance populations. The literature suggests that a global measure of psychiatric severity may be the best predictor of treatment outcome. In addition, it is unclear in which ways and to what extent researchers and clinicians should take into account the maladaptive interpersonal and sociocultural features described in Blatt, Berman et al. (1984) and Johnson and Muffler's (1992) work, which might not always cohere into a specific diagnosis. These characteristics may also adversely impact on an addict's ability to connect with and utilize treatment, but it is unclear if their presence is accounted for by global measures of psychiatric severity such as the ASI. They are certainly not captured by a DSM-III-R diagnosis of APD. The CPI-So, which provides a measure of an individual's sociability, may be able to account for some of those factors.

OPIATE ADDICTION AND DEPRESSION

Craig (1979b) has shown that persons addicted to drugs exhibit higher levels of anxiety and depression than those who are not addicted. Further, Allison, Hubbard and Ginzburg (1985) found that 60% of substance abusers seeking treatment in a national multisite study reported some degree of depressive symptomatology at admission and

more than 30% reported depressive symptoms after one month of treatment. Mirin et al. (1988) notes that among opiate abusers, the prevalence of current major depression appears to range from 15 to 30%, while the lifetime risk for depressive disorders in these patients may be as high as 75%. Brooner et al. (1997) found a prevalence rate of 15.8% for lifetime diagnosis of major depression in heroin addicts; however, only 8% of his sample had a current Axis I diagnosis. He also noted that the rate of major depression in his sample was almost three times greater than that of the general population. (Brooner et al.).

Blatt, Rounsaville, Eyre and Wilber (1984) have noted that numerous clinical studies and research reports suggest that depression is a central issue in opiate addiction. In order to understand more fully the components of depression in heroin addicts, they compared them with non-opiate, polydrug substance abusers on several self-report measures of depression and a clinical interview scale assessing depression. They found that opiate abusers were highly self-critical, but also described themselves as more effective than polydrug abusers and psychiatric patients. This self-reported resourcefulness, Blatt et al. hypothesize, may be essential in order to find the funds and contacts necessary to maintain their opiate addictions. They concluded that this finding is also consistent with other measures in their study as well as other reports that suggest that psychological disturbances in opiate addicted individuals are primarily in the neurotic and character disorder range rather than the psychotic. (Blatt, Rounsaville et al., p. 349). Blatt, Rounsaville et al.'s findings also help to further characterize the meaning of the opiate addicts' elevation on the psychopathic/deviant scale of the MMPI. Instead of being a cold, callous, and distant

psychopath, Blatt, Rounsaville et al. view the typical opiate addict as having a marked vulnerability to a guilt-laden type of depression in which an antisocial individual has prominent feelings of worthlessness and failure. (Blatt, Rounsaville et al., p. 349)

Researchers have also studied whether depression precedes opiate addiction or is a result of drug abuse. In Brooner et al.'s (1997) above-mentioned research, they assessed whether depression occurred in their sample of opiate addicts independent of substance abuse. They found that major depression was rated as substance-induced 78% of the time and lifetime prevalence of major depression independent of substance abuse was only 3.5%. The figures for dysthymia were 54% and 2%, respectively. Rounsaville, Weissman, Crits-Christoph, et al. (1982), administering the Schedule for Affective Disorders and Schizophrenia (SADS) to 157 heroin addicts seeking treatment, found that 17% of opiate addicted individuals in their sample currently suffered from major depression and 48% had suffered from major depression in the past. Furthermore, of addicts with past major depression, 5.6% had depressive episodes preceding their drug abuse and 94.5% were secondary depressives. Reviewing these data, Dackis and Gold (1983) commented that:

> It supports the notion that the tremendously high prevalence of major depression in addicts is somehow caused by the addiction, rather than preceding initial drug use. It seems unlikely that widespread preexisting depressive illness would give rise to opiate use as a form of self-medication. In fact, given the extremely hazardous task of procuring opiates, and the relative passivity associated with depression, it would be surprising to see initial opiate use occurring in the context of a major depression. (Dackis & Gold, p. 107).

It should be noted, however, that depression disorders, in general, have a later age of onset than drug abuse dependence. Thus, many addicts may carry an

"independent" depressive diathesis that is triggered by a drug abuse lifestyle. Some genetics studies suggest a single genetic factor that predisposes an individual to both drug abuse and depression, particularly in women. (Kendler, Heath, Neale, Kessler & Eaves, 1993; Kendler, Neale, et al., 1993). Brooner et al. (1997) found that women in his sample were two to three times more likely than men were to have a lifetime or current major depression diagnosis.

Dackis and Gold (1983) assessed 50 consecutive hospitalized patients with a SADS interview three weeks after opiate detoxification. They found that after opiates were discontinued and withdrawal symptoms had abated the prevalence of major depression among their subjects nearly doubled to a rate of 32%. They postulate that opiates seem to ameliorate the very depressive symptoms that they appear to precipitate, which further bolsters their continued use in a way which is analogous to the manner in which withdrawal symptoms reinforcement opiate addiction. As a result of their findings, they treat recently detoxified opiate addicts with antidepressants because of the severity of their depression symptoms and as a deterrent to relapse. Conversely, Mirin et al. (1988), after assessing depression in patients hospitalized for substance abuse treatment, found that mean scores for depression on several instruments dropped by half for the group as a whole after four weeks in the hospital. The patients that eventually received an independent diagnosis of major or atypical depression had significantly higher scores on the depression instruments at admission and after the fourth week of their hospital stay.

After assessing and reassessing at a six-month interval the 157 heroin addicts mentioned above for depression, Rounsaville, Weissman, Crits-Christoph, et al. (1982)

concluded that the most striking characteristic of the follow-up was the high degree of fluctuation of depressive symptoms. Specifically, nearly all of those meeting criteria for a current major depression at the six-month reevaluation were new cases, as most of those diagnosed with major depression initially had recovered. They determined that depressive symptoms in their sample were stress-related, confirming that addicts typically seek treatment due to some legal, social or pharmacological crisis.

In another study, Rounsaville et al. (1981) administered the SADS to 117 opiate addicts who were seeking drug treatment. They found that major depression was more reliably diagnosed than minor mood disorders and that overall test-retest reliability was only moderate even for major depression. They attribute this to their finding that most addicts with major depressive episodes experience comparatively mild symptoms. Rounsaville et al. commented that, "One has the sense that both addict and rater felt that the addict had trouble controlling affect but the specific nature of the difficulty was difficult to pinpoint." (Rounsaville et al., p. 199). They further noted that at two independent interviews, even if separated by only one day, addicts in their sample "were likely to describe mild symptoms in a rather interchangeable fashion, describing varied states of anxiety, depression, or irritability related to mania in very similar terms" (Rounsaville et al., p. 199).

Rounsaville et al. (1981) have also found that the most commonly diagnosed condition in opiate addicts, major depressive disorder, is responsive to both psychotherapy and pharmacotherapy. In fact, untreated depression in opiate addicts may contribute to their failure to achieve abstinence. Kosten et al. (1986), analyzing the same sample of opiate addicts, found that depressive disorders were associated with

continued illicit drug use at a six month follow-up, in particular that depressed methadone maintenance patients used more cocaine than their non-depressed cohorts. (Kosten et al., 1987). In addition, they found that being depressed and then leaving drug treatment may be a strong predictor of returning to drug abuse. They further determined that the highest risk group for continued drug abuse (those who left treatment, were depressed and who had suffered a recent loss) had a rate of abstinence that was three times lower than that among addicts in the lowest-risk group (those who were in treatment, depression-free and without a significant loss). Kosten et al. (1986) concluded that treatment appeared to increase abstinence by improving an addict's ability to cope with depression and life crises.

Although depression in opiate addicts almost always occurs secondary to drug dependence, and may in some cases be transitory or mild in symptomatology, it helps to perpetuate cycles of addiction, particularly when left untreated. Moreover, the above-described studies make it clear that treating depression can have a positive effect on the overall treatment of opiate addiction. In that case, the importance of what makes patients more or less able to respond to treatment becomes paramount.

ANTISOCIAL PERSONALITY DISORDER

A BRIEF HISTORY OF APD

In the early 19th century, the psychopathic-sociopathic-antisocial behavioral syndrome was the first of the personality disorders to be separated from the insanities and described clinically. (Modlin, 1983). Early practitioners identified the most salient aspects of what today falls clearly under the heading of sociopathy. It was Pritchard in

1835 who is generally credited with creating the earliest clinical description, giving APD the label of "moral insanity," perhaps the most concise and accurate way of defining sociopathy to date. Kraeplin further isolated the psychopathic, unregenerate, antisocial, habitually criminal, chronically-lying, smooth operator from other clinical entities. Bleuler also identified a key feature of most sociopaths when he noted that affective peculiarities are in the foreground of most cases of psychopathy and stated that, "the so-called psychopaths are nearly all exclusively or mainly thymopaths." (Weiss, J.M.A., Davis, Hedlund & Cho, 1983, p. 356).

Freud's ideas about aggression, the death instinct and the superego contributed to an evolving dynamic formulation of psychopathy. Freud asserted that the aggressive instinct "is at work in every living creature, and is striving to bring it to ruin and reduce life to its original state. The organism preserves its own life by destroying another." (Stone, 1991, p. 509). Arlow and Brenner make the point that Freud was moved to revise his previous notion of "ego drives" in the direction of an "aggressive drive" because of his observations of self-directed aggression in cases of melancholia. This concept relates to Freud's then evolving notion of a superego, which he believed became abnormally harsh in melancholics. (Stone, 1991). As an extension of this idea, Freud proposed that the acting out character disorder (something close to what today would be considered APD) is the reverse of neurosis, where unconscious conflicts are expressed in behavior rather than in symbolic symptoms. (Modlin, 1983, p. 134). In 1952, Johnson coined the term superego lacunae to denote not a generalized superego weakness but a specific lack of conscience in areas of overt behavior. (Modlin).

Freud was also interested in other ideas that have become central in current discussions of APD: biological contributions and gender differences. Freud speculated about the biological origins of psychological disorders, and Stone comments that, "Freud alone preserved an open-mindedness about the biological." (Stone, 1991, p. 512). Other early analysts echoed some of these ideas. For example, Fenichel spoke of delinquent youths as "hyperinstinctual" implying a kind of constitutionally excessive, dammed-up libido - a view similar to that expressed by Reich writing on the "impulse-ridden character." (Stone, p. 511). In addition, Freud believed that aggression was intimately bound up with masculinity, with sadism and with being active while he equated femininity with masochism and being passive, an idea that presages APD as a disorder occurring primarily in males. (Stone).

In 1941 Cleckley wrote *The Mask of Sanity*, a clinical description of the psychopath that many consider definitive. (Modlin, 1983). Cleckley's basic hypothesis was that, although the psychopath may appear sane, in reality he suffers from a serious mental illness. He simulates normality but is basically asocial or antisocial because of inadequate personality development. There are serious defects in his "humanness," i.e. his ability to comprehend in himself or others "the purposiveness and the significance of all life-striving and of all subjective experience." (Modlin, p. 134). Cleckley contended that the essential feature of the psychopath lies in the deficient affective responses he displays to other people. (Thomas-Peter, 1992). He emphasized the dynamic features of the psychopath such as an inability to experience guilt or remorse, anxiety and loyalty; the inability to form meaningful and lasting relationships; and the manipulation of others to serve one's own ends. Cleckley and other psychoanalysts also stressed that some

psychopathic individuals do not get into trouble with the law but still demonstrate the underlying psychopathology of the disorder.

Psychoanalysts began to divide individuals who engaged in antisocial behaviors into two groups: those with constitutional deficits and severe psychopathology and those whose antisocial behavior was an expression of neurotic conflicts. Karpman differentiated between "primary" or "idiopathic" psychopaths, who showed both antisocial behavior and characteristic psychological attributes, and "secondary" or "neurotic character" psychopaths, who exhibited antisocial behavior but could feel remorse, loyalty, anxiety, and other "neurotic" affects. Karpman considered the "secondary" psychopath's capacity for neurotic affects to provide a better prognosis in psychotherapy than the "primary" psychopath's lack of such affects. (Goldstein et al., 1996a, p. 322).

CURRENT DIAGNOSTIC FORMULATIONS OF APD

The American Psychiatric Association published the first Diagnostic and Statistical Manual of Mental Disorders (DSM) in 1952, and it listed three divisions of psychopathic states: pathological sexuality, pathological emotionality, and asocial or amoral trends. (Modlin, 1983). The general focus on individuals who lacked particular personality traits (e.g. empathy, appropriate affects) that was present in DSM-I and DSM-II shifted to an emphasis on individuals who engage in particular antisocial acts in DSM-III, DSM-III-R and DSM-IV. (Rutherford, Alterman, Cacciola & Snider, 1995). Part of the impetus for this shift was the larger trend in defining all disorders in ways that could be reliably agreed upon.

The diagnostic criteria for APD in the DSM-III and DSM-III-R (as well as DSM-IV) were greatly influenced by Robins' study of delinquent boys. (Modlin, 1983). Robins' research revealed that pervasive adult antisocial behavior rarely occurs in the absence of a history of pervasive childhood antisocial behavior. (Goldstein et al., 1998). She found that conduct problems in childhood were the best predictor of adult antisocial behavior and inferred that there is continuity between childhood and adult antisocial behavior; she concluded, therefore, that it is a unitary syndrome.

The DSM-III was criticized for emphasizing behavior instead of dynamics and traits. Millon, for example, believes that the criteria for APD give undue prominence to the delinquent or criminal expression of the personality, i.e. behavior. Hare concurs, noting the triviality of the antisocial acts such as childhood thefts, lying and truancy that are used to give an APD diagnosis. (Gerstley, Alterman, McLellan & Woody, 1990). Frances has said, "It would be more useful to have criteria that distinguish those criminals who are capable of loyalty, anxiety and guilt from those who are not, since the behavior and management of each group are likely to be quite different." (Gerstley et al., p. 174).

Modlin (1983) believes that the differences between Cleckley's rich and dynamic clinical description and the DSM-III are encapsulated by the terms psychopath and antisocial. Cleckley, with considerable psychological sophistication, described a true personality type, but the DSM-III merely describes a behavior disorder that is diagnosed by the quantity of misbehavior committed by an individual. This makes it difficult not to diagnose every criminal with APD, making it unclear what the usefulness of such a diagnosis would be. (Modlin). Cleckley himself has argued that psychopathy should

not be equated with criminality, delinquency, sexual deviation, hedonism or alcoholism. Instead, he proposes that 16 different criteria be used to diagnosis APD, including superficial charm, egocentricity, insincerity, affective poverty and interpersonal unresponsiveness. (Blackburn, 1988). The dilemma for clinicians is, however, that these criteria, which may be more useful in assessing the traits that makes an individual with APD difficult to treat, are also difficult to diagnose.

Other commentators believe that defining a disorder of personality in terms of socially deviant behavior is prejudging the issue. (Blackburn, 1988). Blackburn points out that descriptions of antisocial tendencies, such as illegal acts or failure to honor financial obligations, do not describe the how of behavior, and are neither traits nor symptoms. In his view, the DSM definition of APD is actually about social deviance and what constitutes acceptable conduct from a moral frame of reference, something which he contends has no place in a discussion of mental illness.

In response to some of these concerns, an item concerning lack of remorse was added to the DSM-III-R, but it is not a prerequisite for the diagnosis of APD, and a majority of items still seem to be more descriptive of antisocial behaviors than of underlying personality features. (Gerstley et al., 1990). In the DSM-III-R and the current DSM, various combinations of behaviors allow the individual to meet the diagnostic criteria; there are no critical items.

Because most research studies use the DSM-III-R criteria for APD, transitory delinquents who would be given an APD diagnosis because they meet criteria for conduct disorder as well as antisocial behavior past the age of 15, but whose antisocial behavior spontaneously remits during young adulthood, are conflated with continuous

antisocials, whose antisocial behaviors are lifelong. (Stone, 1993). Stone points out that it is important to distinguish between these two types of APD because continuous antisocials have a higher loading of either genetic or environmental influences or both, show criminal activity at a younger age, and persist in this pattern throughout their lives.

Howard (1986) notes that among certain theorists and researchers there is an evolving concept that moves away from regarding APD as a unitary syndrome and instead views the disorder as a family of partially overlapping types of psychopathy. In this model three distinct categories of APD are developing: a type characterized by chronic antisocial behavior starting in childhood or early adolescence; a secondary type characterized at a trait level by impulsivity, social withdrawal and emotional disturbance; and a primary type characterized by impulsivity together with a lack of social withdrawal and emotional disturbance -- i.e. the sociopath Cleckley described in *The Mask of Sanity* and Karpman's primary psychopath who lacks affect.

Methadone maintenance patients predominantly fall into what is increasingly being called, as Howard (1986) notes, the secondary category. But as the foregoing discussion of the diagnostic criteria for APD illuminates, the DSM-III-R definition of APD may not capture the social withdrawal and emotional disturbance of the secondary type sociopath. It is the existence of those very traits, however, that may correlate most prominently with a patient's ability to connect with and utilize substance abuse and psychiatric treatment. In that regard, the CPI-So, which measures norm-observing tendencies and prosocial features such as agreeableness, might have stronger predictive value than a DSM-III-R diagnosis of APD.

APD AND GENDER DIFFERENCES

APD is a relatively common psychiatric condition; the population prevalence for men is estimated to be 2 to 3% and the ratio of men to women with the disorder ranges from 4:1 to 8:1. (Randolph & Yates, 1993). Other surveys of the general population estimate rates of APD among men at 4.5% and among women at .8%. (Cottler, Price, Comptom & Mager, 1995; Weiss, J.M.A. et al., 1983). A number of theorists have noted that there is an overlap between APD and other personality disorders, in particular histrionic and narcissistic personality disorders. Often the diagnosis an individual receives breaks down along gender lines, with men getting labeled antisocial and women getting labeled hysterical. (Modlin, 1983). Wright (1987) has noted that women appear to be more prone to depression and men to APD. He cites a large undergraduate survey where males scored significantly higher on the narcissism scale, which measured traits such as entitlement, exploitiveness, exhibitionism and grandiosity, and women scored significantly higher on the depression scale. (Wright, 1987).

Flynn, Craddock, Luckey, Hubbard and Dunteman (1996), summarizing the results of their large multisite study of substance abusers, concluded that males had twice the odds of being diagnosed with APD compared with females but half the odds of having a lifetime major depressive disorder. They also found that the older a patient is, the less likely he or she is to be diagnosed with APD, and the more likely he or she is to have had a major depressive episode. Brooner et al. (1997), in their extensive study of opiate addicts mentioned above, also found that men were more than twice as likely as women to have APD, with 34% of the men having the diagnosis but only 15% of the women.

Kernberg believes that APD represents a severe form of the narcissistic personality structure, where underlying both disorders is a need to repair the undermined or injured self or create a world where the self is protected from any further injury. In their extreme form, the more typically male ways of repairing and/or maintaining self-integrity resemble many of the characteristics associated with APD. Empirical research supports the connection between narcissism and APD. For example, researchers have found a significant positive correlation between narcissism and psychopathy, as well as the personality traits associated with psychopathy, such as disinhibition, sensation seeking, and boredom susceptibility. (Wright, 1987).

Gender discrepancies have been codified in recent versions of the DSM, beginning with DSM-III. As mentioned above, Robins using an all-male sample, found sufficient consistency between childhood and adult antisocial behaviors to consider APD to be a unitary syndrome beginning in childhood. Although these criteria are used to diagnose APD in men and women, it has never been established that the same consistency between childhood and adult antisocial behaviors exists for women (Rutherford et al., 1995). Rutherford et al. have in fact found that the correlation between childhood and adult criteria is considerably lower for women than for men. They conclude that the precursors of APD in women are different from male precursors and that current DSM criteria used to assess APD do not capture behaviors pertinent to women.

Rutherford et al. (1995) note that the DSM-III-R dropped the six childhood criteria that were the most frequently endorsed, were the most reliable, and had the highest correlation of all childhood criteria for women (Rutherford et al., p. 1315). The

DSM-III childhood criteria that were dropped focused on problems with early involvement in adult behaviors (drinking, sex) and difficulty with family and school (running away, low grades, suspension or expulsion), rather than aggressive or violent behaviors. The childhood criteria that remained in DSM-III-R were among those which were the least frequently endorsed, were the least reliable, and had weak correlations for women (Rutherford et al.). Cacciola, Rutherford, Alterman and Snider (1994) found that even in an all male sample of substance abusers, the rate of APD dropped from 25% to 4% when the DSM-III-R criteria were used in place of the DSM-III criteria.

Goldstein et al. (1996b) looked specifically at gender differences in APD among substance abusers in residential treatment, generally a more severe subpopulation. She found that in childhood males met somewhat more total criteria than females. Childhood differences between males and females were not significant with respect to truancy, starting fights, forcing sexual activity, physical cruelty to people, and stealing either with or without confrontation. Females were less likely than males, however, to have been cruel to animals and to have set fires. On the other hand, females were more likely to have run away either more than once or once without returning to the parental home. (Goldstein et al., p. 40).

Rutherford's research has led her to question the relevance of childhood criteria for women in the diagnosis of APD. She posits that a possible remedy might be to lower the number of total childhood behaviors required for women or to raise the age of onset for conduct disorder in women. Goldstein et al. (1996b) note, however, that in their sample of substance abusers in residential treatment there was no significant difference in age of onset of APD between the men and the women. They hypothesize

that a "male-like age of onset" in females may be associated with a different and perhaps more severe clinical presentation of APD than is seen among men with APD or females with later onset APD. (Goldstein et al., p. 41).

As mentioned above and as will be discussed in further detail below, APD is one of the most frequent psychiatric diagnoses among substance abusers in treatment. In samples of clients in treatment for addiction, APD is four times more common among men and seven times more common among women than in the general population. Of note is that the ratio of prevalence of APD among female substance abusers to that among women in the general population is substantially greater than the same ratio among males. (Goldstein et al., 1996b, p. 35).

Rutherford et al. (1995) also believe that there is a gender discrepancy in adult criteria for APD. They see factors that focus primarily on behaviors that are impulsive, reckless or neglectful, rather than criteria assessing aggressive or illegal behaviors as more appropriate for the assessment of APD in women (Rutherford et al., p. 1316). Other research supports this hypothesis. M.H. Stone, D.K. Stone and Hurt (1987), for example, conducted a large and comprehensive follow-up study of patients treated by intensive hospitalization for borderline personality disorder (BPD), which included a subset of patients with the dual diagnosis of APD and BPD. They noted that the patients who were also diagnosed with APD had a bimodal outcome distribution curve that suggested two very different populations. One group, predominantly male, was more aggressive, violent and amoral, and showed only marginal functioning at follow-up. The other group was equally divided as to gender, consisted of less aggressive persons,

given to truancy, lying, shoplifting, and minor infractions, and their outcomes were substantially more favorable. (Stone et al., p. 202).

In her sample of substance abusers in residential treatment, Goldstein et al. (1996b) found that in adulthood the females had more often acted irresponsibly as parents, engaged in prostitution, and been physically violent against sexual partners and children than the males. The women showed trends toward more often failing to plan ahead or acting impulsively, lacking remorse over their antisocial activities, making money by finding customers for prostitutes, and to a lesser extent financial irresponsibility. Goldstein et al. caution that their finding of a female preponderance of parental irresponsibility may simply indicate that males manifest parental irresponsibility differently from females, i.e. by not acknowledging paternity or not acting as parents at all. (Goldstein et al., p. 41).

Using DSM-III criteria to measure APD, Randolph and Yates (1993) contrasted the effects of the disorder on the phenomenology of alcohol and drug abuse for women compared with men. In their sample of 116 male and 85 female inpatients in alcohol and drug treatment, he found that both men and women with APD were more likely to have experienced earlier onset of drinking and alcohol-related problems as well as increased illicit drug use when compared with the male and female patients without APD. On the other hand, the men in his sample with APD had a lower socioeconomic status, were more likely to have used drugs intravenously and to have a family history of APD than the men without APD did, but these differences were not present among the women in the sample.

Brooner et al. (1993) looked at the relationship between an APD diagnosis and the presence of HIV in a sample of 272 male and female intravenous drug users, half of whom were in methadone maintenance and half of whom were receiving no current treatment. They found that 44% of his sample had a diagnosis of APD, and although more of the subjects who received an APD diagnosis were men than women, the diagnosis of APD was associated with a significantly higher odds ratio of HIV infection, independent of gender, ethnicity and treatment status.

The above-cited studies indicate that the trajectory of APD in women may be quite different than it is in men. For example, childhood symptoms may appear later in women than they do in men. APD is encoded in the DSM-III-R in a way that reflects male patterns of the disorder, but omits many of the non-aggressive acts more strongly correlated with female subtypes of the disorder. This male-bias in DSM-III-R criteria for APD leads to it being severely underdiagnosed in female opiate addicts, despite the fact that prevalence rates are seven times greater for female substance abusers than in the general population. The CPI-So, which attempts to measure the driving forces compelling antisocial behavior, instead of the behaviors themselves, might provide a gender-neutral way of measuring antisocial tendencies.

COMORBIDITY OF APD AND SUBSTANCE ABUSE

APD is one of the most common comorbid disorders among substance abusers in treatment. The ECA study (Regier et al., 1990) estimates that 14% of persons with alcohol abuse or dependence and 18% of those with other substance abuse or dependence met lifetime criteria for APD. An additional diagnosis of APD has

predicted poorer psychosocial functioning and somewhat more problematic substance use posttreatment in many although not all studies of drug abuse populations. (Goldstein et al., 1996a). Generally, the comorbidity of substance abuse with any psychological disorder creates a more dire prognosis. For example, Stone (1993), in his long term follow-up study of psychiatric in-patients, found that the standard mortality rate of those with a personality disorder who also abused alcohol or drugs was three times that of those who did not abuse substances. (Stone, p. 302). Other studies using DSM-III criteria have shown the incidence rate of APD to be about 40 to 50% in samples of male alcoholic patients and male opiate addicts. (Gerstley et al., 1990, p. 173).

Studies indicate that the clinical course of alcoholism is more severe among alcoholics with APD than among alcoholics without APD. (Giancola, Peterson & Pihl, 1993). It has been shown that:

> Alcoholics with APD drink more alcohol, become alcoholic earlier, move more rapidly from moderate drinking to alcoholism and display more psychosocial and substance abuse related problems than do alcoholics without APD. Furthermore, alcoholics with APD are characterized by increased rates of various psychiatric and childhood conduct disorders symptoms, lower educational levels and are born into less affluent families. (Giancola et al., p. 423).

In Brooner et al.'s (1997) recent and extensive survey of 716 methadone maintenance patients, they found that APD was the most common lifetime, non-substance use diagnosis, with 25% of the sample receiving the diagnosis. This rate is eight times greater than that of the general population according to ECA figures. Further, the rate of APD in the sample equaled that of all non-substance use Axis I diagnoses combined. (Brooner et al., p. 72). This is notable because Brooner et al.

found that an APD diagnosis was associated with greater severity of substance use and greater psychosocial problems than the other categories of comorbidity and non-comorbid groups. Three variables in particular distinguished the comorbid groups with APD from the other comorbid groups and the groups with no comorbidity: earlier age at onset of substance abuse, higher number of substance abuse diagnoses, and lower scores on an agreeableness scale, which indicate a greater degree of antagonism and mistrust in the APD groups. (Brooner et al., p. 77).

The DSM criteria for APD do not distinguish antisocial behaviors that occur independent of substance abuse from those behaviors that are clearly related to substance abuse, so it is not surprising that such high rates of comorbidity exist. It also creates a chicken/egg situation as it becomes impossible to distinguish by diagnosis alone whether the antisocial behavior evolved as a result of or merely became exacerbated by a substance use disorder. When using other criteria, such as the Research Diagnostic Criteria (RDC) that specifically require that antisocial behaviors must not be the result of substance abuse, the rates of comorbidity drop substantially. For example, in one study 45% of opiate addicts received an APD diagnosis using DSM criteria, but only 19% did when using RDC criteria. (Gerstley et al., 1990).

Researchers have realized that this overlap between APD and substance abuse has implications for, among other things, diagnostic reliability and stability as well as treatment response, and are now distinguishing between primary and secondary antisocial addicts. (Gerstley et al., 1990). Rounsaville, Kosten and Kleber (1986) label those patients for whom antisocial activities are independent of a need to obtain drugs (basically those who would receive the RDC diagnosis of APD) as primary antisocial

addicts. Secondary antisocial addicts are those for whom antisocial activity is directly related to drug use. Rounsaville, Kosten and Kleber (1986) have found that the primary antisocial group reported more childhood behavioral disruptions and more severe psychopathology than the secondary antisocial group, and they speculate that the treatment outcome of the secondary antisocial group would be better.

There is a significantly higher prevalence of alcoholism and drug abuse in criminals who are diagnosed with APD. (Smith & Newman, 1990, p. 430). Cleckley hypothesized, however, that in the psychopath, alcohol serves as a catalyst that facilitates the expression of antisocial behavior, but "alcohol is not likely to bring out any impulse that is not already potential in a psychopathic personality." (Smith & Newman, p. 430).

In studies (Hemphill, Hart & Hare,1994; Smith & Newman, 1990) of criminal, substance-abusing populations, a two factor analysis of psychopathy has been used. The first factor reflects the interpersonal and affective characteristic central to most clinical descriptions of the psychopath, "callous, selfish, and remorseless use of others" or "interpersonal disesteem". The second factor reflects impulsive and socially deviant behavior and has been labeled having a "chronically unstable and antisocial lifestyle." (Hemphill et al., p. 169).

In their studies of substance abusing criminals both Hemphill et al. (1994) and Smith and Newman (1990) found that alcohol and drug symptoms were associated with a chronically unstable and antisocial lifestyle but not with the personality traits that characterize psychopathy, such as a lack of remorse, pathological egocentricity and shallow affect. Hemphill et al. note that it is unclear how social deviance relates to

substance abuse: "Is substance abuse only one expression of social deviance, is there a common etiology or biological predisposition for one or both, or is the association not really there and simply based on a bias in diagnostic criteria?" (Hemphill et al., p. 178). Frances notes that 80% of criminals qualify for a diagnosis of APD, but only about 30% are diagnosed as psychopathic. (Alterman & Cacciola, 1991). He proposes a diagnostic system that distinguishes criminals who are capable of loyalty, anxiety and guilt from those who are not. (Alterman & Cacciola).

In a further attempt to clarify what part of an APD diagnosis is most relevant for substance abusing populations, Cacciola, Alterman, Rutherford & Snider (1995) and Cacciola et al. (1994) have studied drug abusers who met the adult criteria for APD, but did not satisfy the childhood conduct criterion necessary for an APD diagnosis. In one study, one third of a group of intravenous drug users being treated for cocaine or alcohol dependence met the full diagnostic criteria for APD, and 25% met adult criteria but did not satisfy the childhood conduct disorder criteria. Cacciola et al.'s (1994) results indicated, however, that 82.5% of their subjects satisfied one or more of the childhood APD criteria. Overall, the adult substance abuse and antisocial behavior patterns of those with an APD diagnosis and those who satisfied only the adult APD criteria were similar. (Cacciola et al., 1995).

In another study Cacciola et al. (1994) divided cocaine or alcohol dependent patients into three groups to look at adult problem severity and antisocial behavior. The three groups were those with APD, those who satisfied the adult but not the childhood APD criteria (A-APD) and those who satisfied neither. Cacciola et al. found that the A-APD group was clearly different from the non-APD group and actually much more

similar to the APD group. (Cacciola et al., p. 522). For example, subjects with APD and A-APD were similar with respect to psychiatric comorbidity and family history of substance abuse or antisocial behavior. (Cacciola et al., p. 522). There were a few important exceptions, however. One difference they found is that with regard to substance use, subjects with an APD diagnosis had an earlier onset of many substance abuse disorders than did subjects with an A-APD diagnosis. (Cacciola et al., p. 517).

The most interesting difference is that the APD group had significantly more adult antisocial features than the A-APD group. When the APD and A-APD groups were compared by number of adult APD criteria endorsed, however, the only group differences that consistently remained were difficulty controlling violent behavior and commission of criminal acts. Therefore, it appears that the unique contribution of the early onset criterion for APD diagnosis is that it delineates a group of subjects more likely to engage in criminal and violent behavior. (Cacciola et al., 1994). Cacciola et al. wonder, based on these results, if the APD versus non-APD distinction is fine grained enough for clinical or research purposes, and suggests that a history of aggressiveness may provide an important differentiating factor within the APD category.

Cottler et al. (1995) evaluated the clinical homogeneity of 405 male and female substance abusers with A-APD who did and did not have conduct disorder as children. Their findings were similar to Cacciola's in that addicts with an APD diagnosis were distinguishable from A-APD addicts by more severe adult impulsive and aggressive behaviors and more severe drug abuse, including earlier age of onset of drug use and drug treatment utilization. They did not detect, however, any difference between the APD and A-APD groups on indices of drug use, injection drug use history and comorbid

psychiatric disorders. Overall, APD was more common in the men (44%) in their sample than the women (27%), but A-APD was more common in the women (42%) than the men (33%). Moreover, it was extremely rare for men or women in their sample to have conduct disorder that did not progress to a diagnosis of APD. Overall, 77% of the men and 69% of the women in the sample met criteria for either APD or A-APD.

Strain et al. (1995), commenting on Cottler et al.'s findings, are struck by the similarities between the APD and A-APD subjects. They propose that the DSM include subtypes of non-APD patients who show evidence of misbehavior in adulthood, i.e. patients who only meet criteria for A-APD. They also critique the categorical approach to personality disorders that the DSM relies on, noting that it can be difficult to determine whether the features of the disorder are enduring traits or acute reactions. They wonder whether there are dimensional attributes in drug abusers that cut across categorical diagnoses but are more useful in identifying a prognosis or matching patients to particular treatments. (Strain et al., p. 164).

The trajectory of APD may not be the same for all patients. Although it is clear from the above-mentioned studies that in addict populations those with conduct disorder almost always progress to adult antisocial behavior, the converse may not be true. There is compelling evidence that for some addicts adult antisocial behavior occurs in the absence of childhood conduct disorder or with fewer symptoms of it, particularly its less aggressive manifestations. This indicates that in addition to under diagnosing many females who might be antisocial, a dichotomous measure such as the DSM may be failing to identify men who simply have a later onset of the disorder than the DSM contemplates. Further, it appears that few differences exist between antisocial adults

with and without conduct disorder, and that adult antisocial behavior, regardless of the presence of conduct disorder, correlates negatively with baseline severity and treatment outcome. The CPI-So, which does not focus on aggressiveness or age of onset, might provide a more apt measure of the aspects of APD relevant to treating opiate-addicted populations.

COMORBIDITY OF APD WITH SUBTSTANCE ABUSE AND DEPRESSION

J.M.A.Weiss et al. (1983) studied 524 patients (who were not drug abuse admissions) diagnosed with APD to see if they also had symptoms or signs of depression and/or anxiety, and then compared the depressed psychopaths to groups of non-APD depressed controls and groups of non-depressed psychopaths. Their research identified a subgroup of psychopaths who are characterized by the recognizable behaviors and traits of other psychopaths but who also may be described as dysphoric - depressed and anxious, often with agitation, irritability, suicidal thoughts, and difficulties in intellectual functioning and sometimes with other neurotic traits as well. This subgroup represented 25% of all patients with APD. (Weiss, J.M.A. et al., p. 365). In addition, the depressed psychopaths were a unique group with substantively longer hospital stays than either depressed controls or non-depressed psychopaths. J.M.A. Weiss et al. also found that psychopathy alone decreased the stay in inpatient treatment relative to controls.

A number of more recent studies have found that many substance abusers with APD also qualify for a lifetime diagnosis of major depression or an anxiety disorder. (Gerstley et al., 1990). Some clinicians have noted that conduct disorder and antisocial

behavior in childhood and adolescence frequently mask an underlying depression. (Gerstley et al., p. 176). Nunes et al. (1998) recently found that children, in particular sons, of depressed, opiate-dependent mothers were at increased risk for conduct disorder and global, social and intellectual impairment compared with sons of opiate addicts without major depression and sons of controls with neither drug dependence nor depression.

Hinkin, Kahn and Connelly (1988) gave 368 inpatient, indigent alcoholics the MMPI and found that the group was not homogenous for psychopathology. They identified three categories of psychopathology. Group I, 28% of the population, manifested severe emotional disturbance and had extreme elevations on the schizophrenic, psychopathic deviance and depression scales. Group II accounted for 26% of the population and had moderate elevation on the psychopathic (impulsive-antisocial) deviate and depression scales. Group III, 46% of the population, showed little evidence of severe emotional disturbance, with only one scale elevated. (Hinkin et al., p. 1271). Methadone-maintained heroin addicts mostly fall into the Group II category.

Rousar, Brooner, Reigier and Bigelow (1994) studied how levels of psychiatric distress interact with personality disorders in 167 opioid abusers admitted to a community outpatient treatment program. Patients diagnosed with APD, but no other personality disorder, had significantly lower levels of psychiatric distress, including dysphoric symptoms, than those patients receiving the dual diagnosis of APD and another personality disorder. Rousar et al. noted that the low levels of psychiatric distress in the APD-only patients matched the low levels found in patients with no

personality disorder (including APD) diagnosis. They concluded, "there may be a subgroup of antisocial drug abusers that can be characterized by high symptom distress and personality traits resulting in marked vulnerability to chronic and pervasive neuroticism and emotional instability." (Rousar et al., p. 153). Brooner, Herbst, et al. (1993) conducted a similar study that produced comparable results. They characterized the group with APD as well as another personality disorder as a subset of antisocial patients highly prone to experiencing sustained dysphoric affects. They found that this group also has a pronounced vulnerability to stress, which may be related to a better treatment prognosis (Brooner, Herbst, et al., p. 317).

Whitters, Cadoret and McCalley-Whitters (1987), on the basis of their study of antisocial alcoholics, also argue for the heterogeneity of APD substance abusers. They divided a group of 41 inpatients being treated for acute alcoholism into two groups based on number of reported depressive symptoms. They found that the group with a high number of depressive symptoms had a greater number of overall symptoms and diagnoses, including more symptoms of drug and alcohol abuse, obsessive-compulsive disorder and somatization. This group also showed a higher degree of psychopathology in a number of areas, including a tendency toward more symptoms of anxiety and paranoia. (Whitters et al., p. 517).

Goldstein et al. (1996a) looked at the lack of remorse among 140 drug abusers in residential treatment who were diagnosed with APD. They found that a lack of remorse was associated with a more severe and violent form of APD and increased comorbidity with mood and anxiety disorders. Their findings with respect to Axis I comorbidity directly contradicted previous theoretical and empirical work. Goldstein et al.

hypothesized that the increased Axis I comorbidity in the patients with a lack of remorse might be consistent with findings from follow-ups into adulthood of children with conduct disorder that increasing severity of youthful antisocial behaviors is associated with increasing risk for the eventual onset of emotional disorders including major depression. They cautioned that there may not be a relationship between major depression and lack of remorse per se. Instead, comorbid major depression may merely be a marker for a more severe form of APD. (Goldstein et al., p. 330).

When you start with a group of APD addicts and study them, their variability is striking. The above-mentioned research indicates that a depressed subtype of APD patients may be more treatable than those who receive an APD-only diagnosis are. Most of these studies, however, measured inpatient, substance abuse populations, which is important to note, because no one presents for treatment because of their APD, and it is often difficult to measure APD in outpatient settings. Moreover, in outpatient settings such as methadone clinics patients seek treatment because they are experiencing uncomfortable dysphoric states, and often try to conceal their more antisocial tendencies from treatment providers. In that case, it may be important to look at the reverse of the above-cited studies, that is what are the differences in antisocial tendencies between patients in a group of depressed, methadone-maintained opiate addicts, where the presence of APD may indicate more baseline severity and a poorer treatment outcome.

TREATMENT IMPLICATIONS

Robins noted that there is "a tendency towards spontaneous remission such that few persons diagnosed with APD in adolescence would be so diagnosed in their 30s."

(Stone, 1993, p. 307). That being said, the presence of "APD generally betokens a pessimistic prognosis and an unfavorable life trajectory as tracked in the various outcome studies." (Stone, p. 306). On the other hand, Rousar et al. (1994) offer the following caveat, "Despite the generally poor prognosis of antisocial opioid abusers, it is important to remember that this population is clinically heterogeneous." (Rousar et al., p. 149). This has been amply illustrated in the literature reviewed above, and therefore it follows that different subtypes of APD, as well as various combinations of APD and other disorders, would create different treatment implications.

Stone (1993) makes the distinction between individuals who are alloplastic versus those who are autoplastic. He labels as alloplastic those who would mold the external world so as to suit their wishes and tend to blame as well as to manipulate and coerce others. This is in contrast to autoplastic disorders where the individual tends toward self-blame and self-change. In general, Stone notes that personality disorders characterized chiefly by alloplastic maneuvers are many times more resistant to treatment than those characterized by autoplasticity. APD is an alloplastic disorder and, not surprisingly, treatment studies show poor results.

Stone (1993) also notes that outcome studies involving APD have relied almost exclusively upon recent DSM criteria. Because, as described above, recent versions of the DSM emphasize acts rather than traits, these outcome studies are largely uninformative concerning the fate of persons exhibiting "Cleckleyan" traits. "Antisocial acts," Stone points out, "are much easier to record in the anamnesis and to agree upon between raters, whereas to register such traits as insincerity, mendacity and

irresponsibility requires long and usually painful personal experience with whomever the diagnostician is evaluating." (Stone, p. 306).

In a study of 33 APD patients at the Menninger Clinic, 19 were completely unresponsive to treatment. Predictors of a negative response included a history of a felony arrest or of repeated lying and conning. An early onset of dissocial behavior during childhood was a worse prognostic sign than later onset. (Stone, 1993, p. 304). Stone observed that the presence of strong antisocial traits predicted chronic impairment in BPD, particularly in the male pattern APD discussed above, where outcomes distinctly worse than the average were noted. In Stone's long term follow-up study of in-patient psychiatric patients, he found that:

> Parental brutality emerged in the analysis of variance as the most important negative factor, as the factor with the greatest power to divert the life trajectory downwards toward a worse than average outcome. The consistently poor outcomes noted in borderline patients who had ever been jailed (even for one day, for being caught joyriding) were related in some cases to a life-long pattern of impulsivity and flaunting the law; in other cases to antecedent parental cruelty, which had led to demoralization and counter-aggressivity, culminating in persistent patterns of antisociality. (Stone, p. 304).

Research conducted with opiate addicts suggests that those with a diagnosis of APD have poor treatment responses relative to non-APD addicts. (Hemphill et al., 1994, p. 177). Stone (1993) also found those patients with opioid or alcohol dependency did worse if they also met APD criteria than if free of such signs. Substance abusers with both APD and a history of depression as well as those with APD who are able to form a therapeutic alliance have a history of somewhat better treatment responses. (Hemphill et al., 1994). In their review of outcome studies, Gerstley et al. (1990) note that, "Much of what has been concluded concerning the poorer treatment response of

APD substance abusers appears to be based on the indirect evidence of greater severity of the addiction of the substance abuser with APD." (Gerstley et al., p. 176).

Kadden, Cooney and Getter (1989) found that treatment response in a comorbid APD/substance abusing population was dependent on the type of treatment used. Their research indicated that sociopathic alcoholic patients, defined by their low scores on the CPI-So, showed greater alcohol-related relapse over a 26-week treatment period when treated with interactional therapy rather than with behavioral coping skills training. Conversely, non-APD alcoholics relapsed more when treated with coping skills training instead of interactional therapy.

A Penn-Veterans Administration study revealed that methadone-maintained, opiate addicts with an additional diagnosis of APD were doing more poorly at their seven-month follow-up than groups of addicts who either had no additional psychiatric diagnosis or an additional lifetime diagnosis of major depression (not necessarily current), or APD addicts who also qualified for a life-time diagnosis of major depression. The APD addicts who also met criteria for a lifetime diagnosis of major depression manifested considerable improvement. (Alterman et al., 1991). Rounsaville's research confirms this and he states, "An important issue regarding the diagnosis of APD in addicts is the extent to which this subgroup can become involved in treatment due to the motivation provided by painful affects." (Gerstley et al., 1990, p. 176).

Leal et al. (1994) compared 94 cocaine-abusing methadone patients with and without APD, in a 12-week, double blind medication study. They found that non-depressed, cocaine-dependent methadone patients with the diagnosis of APD alone had

a worse prognosis than non-APD patients in terms of retention in treatment, continued cocaine abuse and response to pharmacotherapy.

Woody, McLellan, Luborsky & O'Brien (1985), in their analysis of the results of the Penn-Veterans Study, hypothesized that the poor response to psychotherapy of the APD-only opiate addicts was due in large part to their extreme difficulties in forming meaningful relationships. Woody et al. state, "Perhaps more than any other aspect of the sociopathy syndrome, the paucity of and superficiality of relationships may be the more negative contributor to the poor outcome of the pure antisocial addicts." (Woody et al., p. 1085). Woody et al. propose that APD-only opiate addicts may need to be treated in a highly structured environment such as a court mandated therapeutic community. The significant behavioral controls in such a milieu may encourage the development of a more self-critical ability that would make these patients more like the opiate-dependent and depressed APD group. (Woody et al., p. 1086).

J.M.A. Weiss et al. (1983), in their study of 524 patients (non-addicts) with APD, also found that those entering treatment primarily because of depression improved when the depression was treated. When the depressive syndrome improved, however, the patients with comorbid APD developed new complaints and a variety of behavior problems that did not respond to medication and only rarely to routine psychotherapy. (Weiss, J.M.A. et al., p. 364).

In Cacciola et al.'s (1995) study of 224 alcohol and/or cocaine dependent men, they divided their subjects into three groups: those with both an adult and childhood APD diagnosis, those with an A-APD diagnosis only and those who had neither adult nor childhood APD. The seven month follow-up measure of treatment response

revealed surprisingly little evidence that the APD subjects had a worse outcome, and whatever evidence there was of worse outcome seemed limited largely to illegal behavior. They note that creating the third group (A-APD) did not reveal additional differences between APD and non-APD groups. They concluded that APD as measured by DSM-III criteria was generally not a negative predictor of treatment response and even cited some evidence that APD subjects made limited greater gains in reducing substance abuse. (Cacciola et al., p. 170).

Cacciola et al. (1995) believe that an alternative view of APD, which includes psychopathic personality traits such as shallow affect, grandiosity, and lack of empathy and remorse, may be more useful in identifying a less treatment responsive group of substance abusers than the current DSM diagnosis of APD. In support of this idea, Hart noted that using such a measure, as opposed to the DSM-III measure of APD, significantly predicted recidivism in paroled prisoners. (Alterman et al., 1991).

Researchers (McLellan et al., 1979) have long recognized that substance abuse is a heterogeneous illness, and it is important to take this into account when designing interventions for this population. Although the literature indicates that a concurrent diagnosis of APD often creates a bleaker prognosis, it is also apparent that the presence of APD can have different implications for treatment depending on other factors, such as subtype of APD and other psychiatric comorbidity. Moreover, patients with multiple comorbidity may look different depending on the lens you first look at them through: depression or APD. Using a DSM-III-R measure of APD may cause clinicians and researchers to overlook the most salient features of APD, especially when it comes to

treatability. The CPI-So may provide a more meaningful window into the treatability of depressed, methadone-maintained heroin addicts.

CONCLUSION

As substance abuse eats up more of society's resources the demand for cost-effective and efficient treatment grows. Opiate addiction is a disorder further complicated by the fact that other psychiatric conditions, most commonly APD and depression, often accompany it. The comorbidity of heroin dependence and non-substance abuse psychiatric disorders usually betokens a more severe baseline severity and poorer outcome. Depression in this population is treatable, however, and leads to an improvement in overall functioning in the addict. Despite the salubrious effect of treatment, not all patients are able to connect with, utilize and respond to it. If the differences between depressed opiate addicts who can and cannot benefit from treatment are understood, interventions can be tailored to fit the needs of specific subgroups. This dissertation attempts to provide an answer to that question by looking at APD, the psychiatric illness most often comorbid with substance abuse, in greater detail.

Generally, the presence of APD worsens the prognosis for an opiate addict. Some studies indicate, however, that treatments designed specifically to take into account APD have a better chance of success in this population. This would be simpler to do if APD were easier to measure, and if it were clear that what a diagnosis of APD, as defined by the DSM-III-R, reflected were those characteristics that make it difficult for patients to connect with treatment. In addition, current diagnostic formulations of APD are under inclusive, with groups such as women, non-aggressive antisocials and

those who have a later onset of the disorder being omitted or undercounted. Finally, all of this is further complicated by the fact that APD may be particularly difficult to assess in outpatient settings, where patients are reluctant to reveal their antisocial acts because they are afraid of losing access to treatment.

This study looks at whether a measure of sociability, the CPI-So, easily administered, not directly about drug use, and not clearly geared toward socially acceptable responses, is able to provide more of a window into differences in baseline severity and treatment outcome among patients than the DSM does.

METHODOLOGY

INTRODUCTION

The present research is part of a larger study comparing the effects of sertraline to placebo in methadone maintenance patients who met criteria for DSM-III-R major depression or dysthymia. Data collection began in September 1994 and continued through May 1999. The study was administered in two different locations. One site, Bridge Plaza Treatment and Rehabilitation Clinic (Bridge Plaza), is a private, freestanding methadone clinic located in Long Island City, Queens, and has an annual census of about 700 patients. The other is an outpatient methadone clinic at Long Island Jewish Medical Center (LIJ), also in Queens, which has a census of approximately 320 patients. The majority of patients at both clinics receive Medicaid. At each site, a team of researchers, which included the principal investigator, Edward Nunes, M.D., an additional research psychiatrist, a research nurse and an independent evaluator and screener (my role), determined study eligibility, treated study patients and collected data.

SAMPLE

All participation in the research study was voluntary. Subjects for the study were recruited by screening each new admission to Bridge Plaza and LIJ, about 450 and 100 patients each year, respectively, for depression disorders. In addition, patients due for their annual clinic physical were also screened for depression. Finally, methadone counselors referred long-term patients to the study if they reported feeling depressed. The initial screening interview typically lasted ten minutes and consisted of obtaining

preliminary demographic information and a brief drug use history and asking about ten questions to assess the presence of depressive symptoms, if any. All patients who appeared depressed were then seen approximately two weeks later by one of the research psychiatrists for another informal assessment of their symptoms. About half of these patients were no longer depressed at the follow-up interview. Those who were still depressed were seen again two weeks later and eligibility for the study was assessed at this point. Patients considered ineligible for the study were those with a seizure history, those with mania or psychosis or chronic organic mental syndromes, patients judged to be at any substantial risk of suicide, and pregnant or lactating women or women not using a reliable birth control method. The following lifetime historical features had to be present in order to meet study criteria: Depression was either primary (antedated substance use), or had persisted during a past abstinent period of at least six months or was of at least three months duration in the current episode and had persisted after at least a month of stable methadone treatment. This last requirement eliminated patients who were experiencing transient self-limited moods as a result of beginning methadone treatment. A minimum methadone dose of 60 mg per day was required for inclusion in the study.

Patients identified as depressed and eligible for the study at the second evaluation interview were given a detailed description of the study by the research psychiatrist, including possible risks and benefits, alternative treatments, the probability of being assigned to medication or placebo, and the monitoring of urine for drugs and alcohol. After the patient signed a consent form, a research psychiatrist then reviewed his or her medical chart and an ECG was administered. If the blood tests or physical

exam given upon admission to the clinic (and yearly thereafter) were done more than two months previously, (or six months in the case of the physical exam), these tests were repeated at the time of study evaluation. Reasons for medical disqualification included, among others, poor liver and/or thyroid functioning.

Table 1 sets forth the mean demographic profile for the study population.

PROCEDURES

At baseline (Week 00) patients were interviewed by a research psychiatrist using the Structured Interview for DSM-III-R-Substance Abuse Comorbidity (SCID-SAC) in order to determine diagnoses of mood disorders, anxiety disorders, substance use disorders and childhood conduct and adult antisocial personality disorders. Patients' depression severity was also assessed at baseline using the Hamilton Depression Scale (HAM-D). Other measures completed at baseline included a Substance Use Weekly Inventory (SUI), Clinical Global Impression Scale for Depression and Substance Abuse (CGI), Craving Scale (CS), and Treatment Services Review (TSR). Each of these measures will be described in more detail below.

A urine sample was collected to assess drug and alcohol use and blood was drawn to assess a baseline blood methadone level. Patients also completed two self-report personality measures at this time, the CPI-So (this measure will be described in more detail below) and the Tridimensional Personality Questionnaire (TPQ). Each patient whose current depression diagnosis was confirmed upon completion of the SCID-SAC was then given one week of placebo medication and, at this point, was

considered to have officially entered the study. The placebo looked the same as subsequent study medication and the patients were blind as to its nature.

The following week (Week RZ) patients met with a psychiatrist and the HAM-D, SUI, CGI, TSR, CS, and one new measure, which simply documents whether patients experienced any adverse effects from the medication (SAFTEE), were administered. Patients who did not feel substantially less depressed after the first week of placebo, as assessed by the HAM-D score, were then randomized to either sertraline or placebo. The randomization was stratified by clinical site and by baseline level of substance use (as assessed by the SUI): low (0 – 2 days per week using) versus high (3 or more days per week using). During Week RZ, patients also met with the independent evaluator, who administered the following instruments: Addiction Severity Index (ASI), HAM-D, CGI, SUI, and Substance Use in the Social Network (SUSN). Patients received $25.00 for completing this interview. Patients then completed a self-report form, the Hopkins Symptom Checklist (SCL-90), and a urine sample was obtained. Patients received a week's supply of study medication, either placebo or sertraline, depending on their randomization; patients and researchers were blind from this point forward about the patient's medication status (placebo versus sertraline). Patients were given enough medicine to take daily for seven days at each weekly visit.

During the subsequent 12 weeks, patients met with a study psychiatrist weekly for evaluation. The psychiatrist assessed current substance use behavior and mood status; assessed medication side effects, if any, and adjusted dosages as needed; reviewed events occurring since the last study visit relating to the patient's social and

vocational functioning; and performed study ratings. The weekly study ratings administered by the psychiatrist were the CGI, SUI, TSR, SAFTEE, and CS, and each even-numbered week (Weeks 2, 4, 6, 8, 10 and 12) a HAM-D was administered. At Week 6, patients completed an SCL-90. Urine samples were obtained weekly and blood was drawn at Weeks 6 and 12 to assess sertraline and methadone levels. Sertraline or a matching placebo was given in a "fixed-flexible" dose schedule aimed at achieving the maximum tolerated dose for each patient. Patients began at 25 mg daily for the first week and increased by 25 mg every week (50 mg increments above 100 mg), until they reached 200 mg (the maximum dosage of sertraline recommended for depression) or until side effects prevented further increases.

The acute trial ended at Week 12 and both the psychiatrist and independent evaluator performed a complete battery of end study ratings, which were a repeat of Week RZ ratings. The patient once again received $25 for meeting with the independent evaluator. The patient also filled out the CPI-So, TPQ and SCL-90 at Week 12. Patients rated as "responders" in terms of depression by the psychiatrist were placed in the continuation phase (Weeks 13 – 24) of the study, even if they were rated "non-responders" in terms of drug use. Weeks 13 – 24 measures are identical to Weeks 1 – 12 measures. All patients, regardless of whether they dropped out of the study before Weeks 12 or 24 or were administratively removed, and assuming they were able to be contacted, were rated at Weeks 12 and 24 by the independent evaluator. Reasons for administrative removal included psychiatric, substance abuse or medical worsening and noncompliance. At Week 12 or 24, depending on whether the patient entered the continuation phase, the blind regarding the medication was

broken and the patient was offered the opportunity to continue treatment for depression with the study psychiatrists; this treatment usually involved sertraline or other antidepressants.

DESCRIPTION OF THE MEASURES

The measures in this study can be divided into three areas: measures of psychopathology, outcome measures, and demographic indices. Measures of psychopathology were given at baseline and completion, with some measures being administered intermittently throughout the study, as indicated above. Certain outcome measures were given on a weekly basis and some were given less frequently, but all were given upon completion of the study. Demographic information was collected at the start of the study. Some measures, such as the ASI, yielded data in all three categories of measures, and certain measures of psychopathology, such as the HAM-D, were also used as outcome measures.

MEASURES OF PSYCHOPATHOLOGY

California Personality Inventory-Sociability Subscale

The primary independent variable in this study is the CPI-So (Appendix A). Gough (1994), the scale's creator, summarizes what the scale measures as follows:

> A basic notion was that scores on the CPI-So scale for both individuals and groups, arrayed from highest to lowest should correspond to a sociological continuum going from persons of exemplary probity and rectitude at one pole, through persons of ordinary norm-observing propensities, to persons of frankly errant and rule-violating dispositions at the other pole. Socialization can then be seen as the internalization of whatever values, systems of control, and adaptive mechanisms may be required for compliance with this normative vector, and scores on the So scale can be conceptualized as an index or a partial index of the extent to which these prosocial internalizations have occurred. (Gough, p. 654).

The CPI-So is a subscale of the California Personality Inventory, which was developed in the early 1950s, and its initial version combined items from the MMPI with items created by the scale's developers based on interpersonal and role-taking considerations. The current 46-item version of the CPI-So was developed in 1987 when the CPI-So was reduced from 54 to 46 items by dropping items that had shown weak validities in the development of the 54-item scale and that did not differentiate well between delinquent and nondeliquent samples in the cross-cultural file.

The range of scores for the CPI is 0 - 46, with lower scores reflecting poorer social judgment and sensitivity, fewer internalized values and less empathy. (Rutherford et al., 1994). Gough (1994) notes low scorers have difficulty getting the "big picture" in regard to physical as well as to interpersonal environments. High scorers, on the other hand, tend to more easily envision distant, future goals. (Gough, p. 693). This difference could have a big impact on a patient's ability to make use of both substance abuse and depression treatment.

Gough (1994) reports in his comprehensive review of studies of the CPI-So that ethnicity, socioeconomic status, intellectual ability and social desirability in the presentation of self all play relatively minor and inconsequential roles in regard to scores on the scale for adults. (Gough, p. 676). He does note, however, that across many different samples, women score about two points higher on the scale than do men of comparable background. Gough states that for men scores of 32 and above are indicative of above-average rectitude and conformity to social norms. Scores of 30 and 32 suggest ordinary normative compliance. Scores of 29 and below begin to

suggest problems, moderate down to about 25 and more serious at 25 and below. (Gough, p. 685). For women, scores of 33 and above are generally indicative of above-average compliance with prosocial norms and convention, scores of 32 to 30 are indicative of ordinary conformity, scores from 29 to 26 are indicative of moderate impairment of the socialization function, and scores of 25 and below are indicative of severe problems. (Gough, p. 687).

The reliability and validity of the CPI scale have been found to be excellent and the scale is recognized as one of the best existing self-report measures of sociopathy available. (Cooney et al., 1990; Gough, 1994; Rutherford et al., 1994). Studies comparing the CPI-So to other measures of psychopathy give it a high rating. (Cooney et al., 1990; Hare, 1985).

A number of studies indicate that the CPI-So has a strong degree of association with sociopathy in substance-abusing populations. (Cooney et al., 1990; Earleywine, Finn & Martin, 1990). The CPI-So has been shown to be a strong predictor of risky drug-use behaviors in opiate-dependent populations. (Tourian et al., 1997). Overall, trait-based measures of sociopathy, such as the CPI-So, are more consistently related to all risky behaviors in substance-abusing populations than a DSM-III-R diagnosis of APD. (Tourian et al.). It has been noted that the CPI-So is a self-report form that can be used without alteration in a substance abuse population, and because most of its questions do not pertain to drug use in any way, it captures antisocial features that have clinical relevance but are not confounded. This is in contrast to the DSM-III-R, which makes it difficult to separate drug-seeking behaviors from antisocial ones. (Tourian et al.).

It has also been shown that (1) scores on the CPI-So scale correlate about -.30 to -.65 with other measures of psychopathy, (2) CPI-So scores differentiate between clinically diagnosed APD and non-APD samples as well as or better than other self-report variables, and (3) in factor analyses of self-report measures for psychopathy, scores on the CPI-So scale appear to have the largest factor loading. (Gough, 1994, p. 659). Cooney et al. (1990) noted, however, that the CPI-So had a somewhat lower coefficient of internal reliability than the other measures examined, although it did meet minimum standards for reliability. They further observed that the strength of the CPI-So is that it is well represented across the categories of sociopathic tendencies, except that only one CPI-So item assesses criminal behavior and no item assesses aggressive behavior. (Cooney et al., p. 46).

Structured Clinical Interview-Substance Abuse (SCID-SAC)

The SCID is a widely used structured diagnostic interview, intended for use by experienced clinicians; the research psychiatrists in this study have all had extensive SCID training and experience. The SCID is designed so that virtually all symptoms of diagnostic relevance for a disorder, as defined by the DSM-III-R, are inquired about. The advantage of this approach is a comprehensive symptom assessment that minimizes bias from premature decisions about the presence or absence of a diagnosis under consideration. (Spitzer, Williams, Gibbon & First, 1992, p. 625). Since its development, it has been used in more than 100 published studies. (Spitzer et al.). A comprehensive review of studies assessing the reliability of the SCID concluded that it yields highly reliable diagnoses for most Axis I and Axis II disorders. (Segal, Hersen & Van Hasselt, 1994). In addition, test-retest

reliability of the SCID has been good in field trials with trained raters. (Williams et al., 1992). Kranzler, Kadden, Babor, Tennen and Rounsaville (1996), in a sample of 100 substance abuse patients, evaluated the concurrent, discriminant and predictive validity of SCID substance use diagnoses, as well as co-morbid disorders that occur commonly among these patients. The validity of current and lifetime substance use diagnoses was good, but was only moderate for APD and major depression. (Kranzler et al.).

The SCID-SAC (Appendix B) is a modification of the SCID, developed by Dr. Nunes in collaboration with Dr. Williams. The SCID-SAC establishes temporal relationships between mood disorders and substance use, which are essential for determining eligibility according to the study inclusion criteria. The SCID-SAC allows the interviewer to rate whether a disorder is primary, i.e. antedates substance abuse, or has occurred during a past period of at least six months of abstinence from drugs and alcohol, as well as to rate the chronicity of mood disorders and the duration of the current episode. Test-retest reliability of the time course ratings has been generally good to excellent. (Nunes, Goehl & Seracini, 1996).

Hamilton Depression Scale (HAM-D)

The HAM-D is the most widely used scale for patient selection and follow-up in research studies of treatments of depression. (Williams, 1988). The study used a 25-item, structured interview version of the HAM-D, which incorporates the reverse vegetative symptoms (oversleeping or overeating) of atypical depression but permits calculation of the standard 17 and 21 item scores that are imbedded in the scale. The symptoms are defined by anchor-point descriptions that increase in intensity, and

clinicians consider both the intensity and frequency of a symptom when assigning it a rating value. (Williams, 1988, p. 742). In numerous studies the HAM-D has proved to be reliable and to have a high degree of concurrent and differential validity. (Carroll, Fielding & Blashki, 1973).

Hopkins Symptom Checklist (SCL-90)

The SCL-90 is a self–rated 90-item inventory of severity for a wide range of psychiatric symptoms seen in depressive and anxiety disorders. Nine factor scores are generated, including depression, anxiety, phobic anxiety, somatization, interpersonal sensitivity, paranoia, psychoticism, obsessive-compulsive, and hostility. Normative studies have been conducted on clinical and non-clinical populations. (Derogatis, 1983). Test-retest reliability and discriminant, concurrent and construct validity have all been shown to be good. (Derogatis). The SCL-90 has been shown to correlate well with clinician rated improvement and provides a measure of self-perceived symptoms and subsequent symptom reduction.

Addiction Severity Index (ASI)

The Addiction Severity Index is one of the most widely used assessment instruments in the substance abuse field. (Alterman, 1994). It is a semi-structured interview that assesses seven problem areas affected by substance abuse: medical, employment/financial, drug use, alcohol use, family/social, legal, and psychiatric. There are summary measures in each area: interviewer severity ratings, which help assess the need for additional treatment in these areas; and composite scores, which assess the problem level in each of these areas during the past 30 days. Interviewer severity ratings require the interviewer to establish a rating of the severity of "need

for additional treatment" in each area ranging from 0 (no problem) to 9 (most severe). The composite scores are arithmetically derived scores ranging from 0 (no problems) to 1 (severe problems) and only include items which are subject to change (occurrence in the past thirty days or during the follow-up period). Therefore, McLellan et al. (1985) have recommended that composite scores be used in treatment outcome studies. The ASI has good inter-rater and test-retest reliabilities. (Alterman, Brown, Zaballero & McKay, 1994; McLellan et al., 1985). Comparisons of the ASI severity ratings and composite measures with a battery of previously validated tests indicated evidence of concurrent and discriminant validity. (McLellan et al.). Moreover, reliability and validity results were consistent across subgroups of patients categorized by age, race, sex, primary drug problem, and treatment center. (McLellan et al.).

OUTCOME MEASURES

Quantitative Urine Analysis

A urine sample was collected weekly from each patient. The sample was then sent to the Central Reference Laboratory at New York State Psychiatric Institute and assessed for semi-quantitative levels of drugs or their metabolites in urine. Urine creatinine concentration was also measured, so that levels were expressed as ng (nicogram) drug per mg of creatinine--i.e. corrected for the diluteness of the urine. Full panel screens for cocaine, heroin, benzodiazepines, THC (marijuana), alcohol, barbiturates, amphetamines and PCP were done on each urine sample. Quantification of all substances, except alcohol, was obtained; quantification of alcohol levels is difficult because its rapid metabolism obscures the relationship between urine level

and quantity consumed. In the case of alcohol, the laboratory assessed its presence or absence in the patient's urine.

Substance Use Weekly Inventory (SUI)

The SUI is a brief clinician-administered instrument where the rater elicits from the patient the quantity (reported as average dollars and maximum dollars in street value per day used) and frequency (in days) of consumption of opiates, cocaine, alcohol, marijuana, amphetamines, sedatives, PCP, and prescription medications for the past week. Route of use, days per week of intravenous use and number of days craving and intensity of craving for each substance is also elicited.

HYPOTHESES

The purpose of this dissertation is to explore the utility of two different measures of APD when seeking to understand depressed, methadone-maintained heroin addicts. APD, the personality disorder most often comorbid with opiate dependency, has been implicated in assessing how to design treatment for and predict outcome in addicts. As outlined in the literature review, controversy exists regarding how to define as well as measure sociopathy. The CPI-So and the DSM-III-R are both widely used and respected measures of sociopathy, but they each approach APD differently. The DSM-III-R assesses the presence of antisocial behavior in a dichotomous, present/absent manner, while the CPI-So gauges traits associated with APD on a continuum from normal to sociopathic. In addition, APD, as defined and measured by the DSM-III-R, undercounts women, non-aggressive antisocials and individuals who have a post-childhood onset of the disorder. Moreover, addicts

being interviewed in order to make a DSM-III-R diagnosis of APD may be likely to underreport socially unacceptable behavior, particularly in outpatient settings. The CPI-So, on the other hand, has been found to be gender-neutral, not focused on aggression or age of onset, and not geared toward giving the socially acceptable response. My overall hypothesis is that the CPI-So will be a more useful measure than a DSM-III-R diagnosis of APD when attempting to understand and treat depressed, methadone-maintained heroin addicts. This comparison will be made in three different general areas of the study population: demographics, baseline psychiatric and addiction severity, and psychiatric and substance use outcome.

DEMOGRAPHICS

It is expected that the prevalence rate of sociopathy in the study population as measured by the CPI-So will be higher than when measured by the DSM-III-R. Further, it is expected that more women in the study population will be diagnosed with APD as measured by the CPI-So than by the DSM-III-R. In addition, it is expected that subjects who have lower scores on the CPI-So will be more likely to be unmarried and unemployed, and have fewer years of education, whereas there will be less of a correlation between a DSM-III-R diagnosis of APD and marital and employment status, or years of education. Finally, it is expected that subjects who receive a diagnosis of APD according to the DSM-III-R will have the lowest scores on the CPI-So.

BASELINE SEVERITY

Overall, it is expected that subjects with lower CPI-So scores will have a greater baseline severity as measured by their HAM-D scores, SCL-90 global scores,

ASI-Psychiatric Composite Subscale scores, SUI – overall severity scores, years of heroin use, years of cocaine use and years of benzodiazapene use. It is also expected that there will be no correlation between a DSM-III-R diagnosis of APD and baseline severity as measured by the HAM-D scores, the SCL-90 global scores, the ASI-Psychiatric Composite Subscale scores, SUI – overall severity scores, years of heroin use, years of cocaine use and years of benzodiazapene use.

OUTCOME

It is expected that subjects with lower CPI-So scores will have a worse outcome as measured by number of weeks in the study, percent of weekly urine samples that are positive for drugs and/or alcohol, change in SCL-90 scores at end study versus baseline, change in HAM-D scores at end study versus baseline, change in ASI-Psychiatric Composite Subscale score at end study versus baseline, and change in SUI – overall severity score at end study versus baseline. It is also expected that, in contrast, there will be no correlation between a DSM-III-R diagnosis of APD and outcome as measured by number of weeks in the study, proportion of weekly urine samples that are positive for drugs and/or alcohol, change in SCL-90 scores at end study versus baseline, change in HAM-D scores at end study versus baseline, change in ASI-Psychiatric Composite Subscale scores at end study versus baseline, and change in SUI – overall severity score at end study versus baseline.

RESULTS

INTRODUCTION

The results of this study were surprising. The metahypothesis was that more subjects would be classified as sociopathic using the CPI-So than using a DSM-III-R measure of sociopathy, leading to greater predictability of certain demographic factors, baseline severity, and outcome for subjects. Although it was anticipated that more subjects would be sociopathic as measured by the CPI-So, it was also expected that the CPI-So scores would fall along a continuum, as Gough describes, from "persons of ordinary norm-observing propensities, to persons of frankly errant and rule-violating dispositions at the other pole." (Gough, 1994, p. 654). This was not the case. Almost every subject in the study received a score on the CPI-So that classified him or her as sociopathic. The lack of range in CPI-So scores made a determination regarding the predictive utility of the CPI-So difficult, and also called into question the continuous nature of the measure, particularly at the low end of the scale.

As hypothesized, a DSM-III-R diagnosis of APD had no predictive utility in any of the three areas discussed herein: demographics differences, baseline severity and outcome. Other than the important initial finding that almost the entire study population can be characterized as antisocial according to the CPI-So, which also includes all of the women in the study, almost no other significant findings were revealed regarding the predictive utility of the CPI-So in this population.

DEMOGRAPHICS

It was expected that the prevalence rate of sociopathy in the study population as measured by the CPI-So would be higher than when measured by the DSM-III-R. This hypothesis was overwhelmingly confirmed. Moreover, rates of APD, as measured by those individuals having both a DSM-III-R diagnosis of conduct disorder and adult-APD[1], were lower than those reported in the literature: 14% (10 subjects out of 69 who were given the SCID) received a DSM-III-R diagnosis of APD. An additional 10% of subjects (7 out of 69) fell into the APD subthreshold category. For the purposes of this study, subthreshold was defined to include any subjects who were categorized as subthreshold for both adult-APD and conduct disorder according to DSM-III-R criteria, as well as any individuals who received a diagnosis of either conduct disorder or adult-APD, but not both. In contrast, the rate of sociopathy as measured by the CPI-So was 84.8% using a CPI-So cut-off score of 25 and below for sociopathic, and 98.4% when using a CPI-So cut-off score of 29 and below to define sociopathy. (See Table 2.)

It was also expected that more women in the study population would be diagnosed with APD as measured by the CPI-So than by the DSM-III-R. This hypothesis was also confirmed. 10% (3 out of 29) of the female subjects who completed the SCID were diagnosed with APD as measured by the DSM-III-R, compared to 18% (7 out of 40) of the male subjects who completed the SCID. (See Tables 3a and 3b.) By contrast, the overwhelming majority of both genders were labeled sociopathic according to their CPI-So scores. (See Table 2.) The mean CPI-

[1] According to the DSM-III-R a diagnosis of APD is only made if an individual is at least 18 years of age and there is evidence of conduct disorder with onset before the age of 15.

So score for men was 19.22 (SD = 5.59), and the mean CPI-So score for women was 18.83 (SD = 4.50). (See Table 4.) No variance by gender was detected ($X^2 = .77$; $p < .68$).

In addition, it was expected that subjects who had lower scores on the CPI-So would be more likely to be unmarried and unemployed and have fewer years of education, whereas there would be less of a correlation between a DSM-III-R diagnosis of APD and marital and employment status or years of education. Analyses of variance (for continuous variables) or Pearson chi-squares (for categorical variables) were performed. No differences, however, in correlation with marital and employment status or years of education were found between a DSM-III-R diagnosis of APD or a CPI-So classification as sociopathic.

For purposes of all analyses discussed below, the CPI-So scores were trifurcated by score into low, medium and high (sociopathy) groups. The CPI-So high group consisted of subjects with scores ≤ 16; the CPI-So medium group consisted of subjects with scores between 17 and 21; and the CPI-So low group consisted of subjects with scores ≥ 21. It should be noted that the division of the scores was done to facilitate analysis and that even subjects in the CPI-so low group had scores that fell well below the sociopathic cut off point.

The mean number of years of education for subjects in the CPI-So low, medium, and high groups was 12.35 years (SD = 2.41), 11.84 years (SD = 1.72) and 11.43 years (SD = 1.75), respectively. (See Table 4.) No significant variance among the groups was detected ($F = 1.13$; $p < .33$).

The number of subjects employed in the CPI-So low, medium, and high groups was 8, 6 and 5, respectively, and the number unemployed was 12, 6 and 19, respectively. (See Table 4.) No significant differences among the groups were identified. ($X^2 = 2.11$; $p < .35$).

The number of subjects married or living with someone in the CPI-So low, medium, and high groups was 7, 4 and 8, respectively, and the number not married or living with someone was 13, 21 and 13, respectively. (See Table 4.) No significant differences among the groups were found. ($X^2 = 3.26$; $p < .20$).

The subjects were also classified according to race and CPI-So score. The groups broke down as follows: the CPI-So low group consisted of 5 African-Americans, 3 Hispanics and 12 Caucasians; the CPI-So medium group consisted of 5 African-Americans, 6 Hispanics and 13 Caucasians and one subject classified as "other"; and the CPI-So high group consisted of 3 African-Americans, 3 Hispanics and 15 Caucasians. (See Table 4.) No racial differences among the three CPI-So groups were uncovered ($X^2 = 3.70$; $p < .72$).

For purposes of all analyses discussed herein, subjects were divided into three groups according to their DSM-III-R APD diagnosis as measured by the SCID. The three groups are: those who did not meet the criteria o APD according to the DSM-III-R, labeled the *absent* group; those who met the full DSM-III-R criteria for APD (subjects diagnosed with both conduct disorder and adult-APD), labeled the *present* group; and a third group, labeled the *subthreshold* group, consisting of subjects who met some (three out of four) but not all of the DSM-III-R criteria for both conduct

disorder and adult-APD, or any subject who received a diagnosis of conduct disorder or adult-APD, but not both.

The mean number of years of education for subjects in the APD absent, subthreshold, and present groups was 11.79 years (SD = 2.07), 12.93 years (SD = 2.13) and 11.62 years (SD = 1.71), respectively. (See Table 5.) No significant variance among the groups was detected ($F = .37$; $p < .69$).

The number of subjects employed in the APD absent, subthreshold, and present groups was 12, 6 and 3, respectively and the number unemployed was 26, 8 and 10, respectively. (See Table 5.) No significant differences among the groups were identified ($X^2 = 4.28$; $p < .12$).

The number of subjects married or living with someone in the APD absent, subthreshold, and present groups was 15, 3 and 2, respectively, and the number not married or living someone was 23, 11 and 11, respectively. (See Table 5.) No significant differences among the groups were found ($X^2 = 1.92$; $p < .38$).

The subjects were also classified according to race and APD status. The groups broke down as follows: the APD absent group consisted of 7 African-Americans, 7 Hispanics and 21 Caucasians and one subject classified as "other"; the APD subthreshold group consisted of 1 African-Americans, 1 Hispanics and 10 Caucasians; and the APD present group consisted of 3 African-Americans, 3 Hispanics and 7 Caucasians. (See Table 5.) No racial differences among the three APD groups were uncovered ($X^2 = 4.39$; $p < .63$).

Finally, it was expected that subjects who received a diagnosis of APD according to the DSM-III-R would have the lowest scores on the CPI-So. This was

true at the trend level ($p < .06$) for the entire population, not true when just considering female subjects, and confirmed for male subjects ($p < .03$). (See Tables 3 – 3b.)

BASELINE SEVERITY

It was expected that subjects with lower CPI-So scores would have a greater baseline substance abuse and psychiatric severity. Baseline severity was measured by years of regular heroin, cocaine and benzodiazapene use, SUI – Overall Severity rating, HAM-D score, SCL-90 global score, and ASI-Psychiatric Composite Subscale scores. Regular heroin, cocaine and benzodiazepene use was defined as number of years each of those substances was used at least 3 times a week. The SUI-Overall Severity rating was calculated by dividing the days using heroin, cocaine or both by the number of days assessed during the baseline phase of the study. It was also expected that there would be no correlation between a DSM-III-R diagnosis of APD and baseline substance abuse and psychiatric severity. Analyses of variance were performed, and neither CPI-So score nor a DSM-III-R diagnosis of APD was able to predict a greater baseline substance abuse or psychiatric severity.

SUBSTANCE ABUSE

The mean SUI-Overall Severity score for subjects in the CPI-So low, medium, and high groups was .32 (SD = .39), .18 (SD = .26) and .30 (SD = .30), respectively. (See Table 6.) No significant variance among the groups was detected ($F = 1.56$; $p < .22$).

The mean number of years of regular heroin use for subjects in the CPI-So low, medium, and high groups was 11.95 years (SD = 7.27), 11.87 years (SD = 8.40) and 11.26 years (SD = 8.50), respectively. (See Table 6.) No significant variance among the groups was found ($F = .05$; $p < .95$).

The mean number of years of regular cocaine use for subjects in the CPI-So low, medium, and high groups was 8.08 years (SD = 6.55), 9.41 years (SD = 6.65) and 9.39 years (SD = 7.62), respectively. (See Table 6.) No significant variance among the groups was uncovered ($F = .17$; $p < .85$).

The mean number of years of regular benzodiazapene use for subjects in the CPI-So low, medium, and high groups was 5.00 years (SD = 7.89), 5.33 years (SD = 7.70), 5.33 years (SD = 9.50), respectively. (See Table 6.) No significant variance among the groups was detected ($F = .004$; $p < 1.00$).

The mean SUI-Overall Severity score for subjects in the APD absent, subthreshold, and present groups was .27 (SD = .35), .23 (SD = .34) and .31(SD = .36), respectively. (See Table 7.) No significant variance among the groups was found ($F = .10$; $p < .91$).

The mean number of years of regular heroin use for subjects in the APD absent, subthreshold, and present groups was 11.51 years (SD = 7.87), 11.17 years (SD = 8.08) and 14.00 years (SD = 9.67), respectively. (See Table 7.) No significant variance among the groups was found ($F = .41$; $p < .67$).

The mean number of years of regular cocaine use for subjects in the APD absent, subthreshold, and present groups was 8.71 years (SD = 7.21), 10.25 years (SD

= 11.53) and 11.56 years (SD = 6.33), respectively. (See Table 7.) No significant variance among the groups was uncovered (F = .54; p < .59).

The mean number of years of regular benzodiazapene use for subjects in the APD absent, subthreshold, and present groups was 5.18 years (SD = 7.54), 3.67 years (SD = 3.06) and 9.75 years (SD = 13.52), respectively. (See Table 7.) No significant variance among the groups was detected (F = .59; p < .56).

PSYCHIATRIC SEVERITY

The mean HAM-D score for subjects in the CPI-So low, medium, and high groups was 17.96 (SD = 4.50), 18.64 (SD = 3.96) and 17.00 (SD = 3.15), respectively. (See Table 6.) No significant variance among the groups was found (F = 1.06; p < .35).

The mean SCL-90 global score for subjects in the CPI-So low, medium, and high groups was 18.79 (SD = 7.08), 20.46 (SD = 6.42) and 18.78 (SD = 4.33), respectively. (See Table 6.) No significant variance among the groups was detected (F = .56; p < .58).

The mean ASI-Psychiatric Composite Subscale scores for subjects in the CPI-So low, medium, and high groups was .46 (SD = .13), .50 (SD = .11) and .51 (SD = .12), respectively. (See Table 6.) No significant variance among the groups was uncovered (F = 1.24; p < .30).

The mean HAM-D score for subjects in the APD absent, subthreshold, and present groups was 19.94 (SD = 3.50), 15.86 (SD = 3.76) and 18.20 (SD = 3.65), respectively. (See Table 7.) No significant variance among the groups was detected (F = 1.15; p < .32).

The mean SCL-90 global score for subjects in the APD absent, subthreshold, and present groups was 19.02 (SD = 5.41), 16.55 (SD = 2.68) and 21.05 (SD = 7.99), respectively. (See Table 7.) No significant variance among the groups was found ($F = 1.00$; $p < .37$).

The mean ASI-Psychiatric Composite Subscale scores for subjects in the APD absent, subthreshold, and present groups was .47 (SD = .11), .48(SD = .14) and .56 (SD = .13), respectively. (See Table 7.) No significant variance among the groups was discovered ($F = 2.66$; $p < .08$).

OUTCOME

It was expected that subjects with lower CPI-So scores would have a worse substance abuse and psychiatric outcome. The outcome measures used were percent of weekly urine samples that were positive for drugs and/or alcohol, change in SUI-Overall Severity scores at end study versus baseline, change in HAM-D scores at end study versus baseline, change in SCL-90 scores at end study versus baseline, change in ASI psychiatric severity rating at end study versus baseline, and number of weeks in the study. The SUI-Overall Severity rating was calculated by dividing the days using heroin, cocaine or both by the number of days assessed during the end-study phase of the study. It was also expected that, in contrast, there would be no correlation between a DSM-III-R diagnosis of APD and outcome. Analyses of variance were performed, covarying end study scores with baseline scores (except for percentage of positive drug and alcohol urine screens and number of weeks in the

study), and neither CPI-So score nor a DSM-III-R diagnosis of APD was able to predict substance abuse or psychiatric outcome.

SUBSTANCE ABUSE

The proportion of weekly urine samples that was positive for drugs and/or alcohol in the CPI-So low, medium, and high groups was .73 (SD = .41), .69 (SD = .43) and .72 (SD = .40), respectively. (See Table 8.) No significant variance among the groups was detected ($F = .04$; $p < .96$).

The mean end-study SUI-Overall Severity scores for subjects in the CPI-So low, medium, and high groups was .15 (SD = .19), .16 (SD = .36) and .30 (SD = .36), respectively. (See Table 8.) No significant variance among the groups was found, and none of the groups improved over time ($F = 1.67$; $p < .20$).

The proportion of weekly urine samples that were positive for drugs and/or alcohol in the APD absent, subthreshold, and present groups was .74 (SD = .40), .86 (SD = .16) and .70 (SD = .48), respectively. (See Table 9.) No significant variance among the groups was discovered ($F = .33$; $p < .72$).

The mean end-study SUI-Overall Severity scores for subjects in the APD absent, subthreshold, and present groups was .16 (SD = .23), .27 (SD = .46) and .22 (.29), respectively. (See Table 9.) No significant variance among the groups was found, and the groups did not improve over time ($F = .14$; $p < .87$).

PSYCHIATRIC SEVERITY

The mean end-study HAM-D score for subjects in the CPI-So low, medium, and high groups was 12.39 (SD = 6.36), 12.20 (SD = 5.71) and 13.78 (SD = 5.88), respectively. (See Table 8.) No significant variance among the groups was detected

($F = .03$; $p < .97$). There was, however, a main effect of time in the change of HAM-D scores from baseline to end study ($F = 49.30$; $p < .0001$).

The mean end-study SCL-90 global score for subjects in the CPI-So low, medium, and high groups was 18.84 (SD = 8.79), 18.51 (SD = 5.62) and 17.70 (SD = 5.38), respectively. (See Table 8.) No significant variance among the groups was detected, and the groups did not improve over time ($F = .24$; $p < .79$).

The mean end-study ASI-Psychiatric Composite Subscale scores for subjects in the CPI-So low, medium, and high groups was .44 (SD = .18), .43 (SD = .16) and .49 (SD = .21), respectively. (See Table 8.) No significant variance among the groups was found, and none of the groups improved over time ($F = .50$; $p < .61$).

The mean end-study HAM-D score for subjects in the APD absent, subthreshold, and present groups was 12.23 (SD = 6.22), 13.43 (SD = 6.00) and 13.40 (SD = 3.81), respectively. (See Table 7.) No significant variance among the groups was discovered ($F = .21$; $p < .81$). There was, however, a main effect of time in the change of HAM-D scores from baseline to end study ($F = 17.72$; $p < .0001$).

The mean end-study SCL-90 global score for subjects in the APD absent, subthreshold, and present groups was 18.61 (SD = 6.72), 16.91 (SD = 6.97) and 19.64 (SD = 6.57), respectively. (See Table 9.) No significant variance among the groups was discovered, and none of the groups improved over time ($F = .63$; $p < .54$).

The mean end-study ASI-Psychiatric Composite Subscale scores for subjects in the APD absent, subthreshold, and present groups was .45 (SD = .17), .37 (SD = .22) and .49 (SD = .18), respectively. (See Table 9.) No significant variance among

the groups was detected, and none of the groups improved over time ($F = 1.49$; $p < .24$).

OTHER

The mean number of weeks in the study for subjects in the CPI-So low, medium, and high groups was 12.43 ($SD = 6.44$), 12.08 ($SD = 6.07$) and 12.74 ($SD = 4.68$), respectively. (See Table 8.) No significant variance among the groups was found ($F = .08$; $p < .93$).

The mean number of weeks in the study for subjects in the APD absent, subthreshold, and present groups was 13.31 ($SD = 6.01$), 10.57 ($SD = 6.19$) and 12.60 ($SD = 1.90$), respectively. (See Table 9.) No significant variance among the groups was discovered ($F = .74$; $p < .48$).

DISCUSSION

INTRODUCTION

The aim of the present study was to compare two different measures of APD, one trait-based and one behavior-based, in a methadone-maintained, depressed, heroin addict population. The behavior-based measure of APD has been codified in the DSM-III-R (and DSM-IV), and as discussed above, many commentators believe that it does little more than reflect behaviors that are already explained by an individual's substance abuse, particularly in the case of severe addicts, such as the current population. For example, *The New York Times* (Finkelstein, 2000) recently reported that in New York City alone, 75% of all people arrested test positive for drugs. It was the hope of the present study to show that a trait-based measure, the CPI-So, would provide greater predictability of demographic differences, baseline severity and treatment outcome.

As predicted, the present study found no correlation between a measure such as a DSM-III-R diagnosis of APD and baseline severity or treatment outcome. In other words, knowing about an addict's asocial, amoral and/or illegal *behaviors* did not provide any additional information about the severity of his or her addiction or its treatability. Contrary to the hypothesis of the present study, however, knowing about an addict's antisocial *traits*, as measured by the CPI-So, did not predict demographic differences, baseline severity or treatment outcome either.

So what does this study reveal? One important finding is that, as hypothesized, men and women can look the same when APD is assessed using a trait-based measure and very different when using DSM-III-R diagnostic criteria. Another interesting, but unexpected, finding is that almost the entire population appeared to be antisocial through

the lens of the CPI-So, while fewer individuals than the literature would predict were antisocial according to the DSM-III-R. Why is this important if neither a trait-based, nor a behavior-based measure predicts baseline severity or treatment outcome? For one thing, the overwhelming prevalence of antisocial character traits in this population may help to answer the question posed in the introduction: "If methadone maintenance is such a stabilizing force in heroin addiction, why is the population as a whole so low-functioning?" If the baseline severity and treatment outcome measures are regarded as describing a homogenous group of addicts, these data taken as a whole may offer some clues about this difficult to treat population. This section attempts to make sense of the data from that perspective as well as explaining the results of the study.

WHAT THE FINDINGS MEAN

The findings suggest that rates of APD as measured by the CPI-So versus the DSM-III-R diagnostic criteria differ significantly. Gender differences in rates of APD were absent on the CPI-So and strong on the DSM-III-R measure. Despite the dramatic difference in rates of APD, neither measure provided predictive utility in the three areas assessed in the study: demographic differences, baseline severity, and treatment outcome. In addition, the study did not find the expected rate of APD, according to DSM-III-R criteria, in this population.

LOW RATE OF APD AS MEASURED BY DSM-III-R CRITERIA

Various studies, as discussed above, set the rate of APD for chronic opiate abusing populations at anywhere from 25% (Brooner et al., 1997) to 50% (Gerstley et al., 1990). In the present study, the rate of APD, as measured by DSM-III-R criteria, for the overall population was 14%. This low rate of APD was puzzling, particularly given

the anecdotal evidence of poor school performance, numerous arrests and illegal acts that were often mentioned in passing as subjects were interviewed. For example, I recall one subject's answer to the question, "How do you do it?" which I was asking in order to ascertain the way he ingested opiates not, as he mistakenly believed, to find out how he supported his $70 a day heroin habit. He casually replied "I boost," (a common term for shoplifting among substance abusers).

The low rate of APD may be explained by two factors. The first is that the main purpose of the sertraline study, from which the data used herein were derived, was to determine how effective sertraline was in alleviating depression and curbing illicit drug abuse in a methadone maintenance population. The two independent measures used in the present study, the SCID module on APD and the CPI-So, were part of the general data collection, but had no direct bearing on the primary aim of the sertraline study. As a result, when completing the SCID module on APD, clinicians did not press subjects regarding their illegal and asocial behaviors as they might have if APD had been part of the main hypothesis being tested. This lack of a "prosecutorial stance" regarding the SCID module may have contributed to the low rate of APD assessed in this population, which leads to the second factor. Without persistent interviewing and/or information from collateral sources, outpatients are reluctant to reveal bad acts. This is particularly true when they are receiving methadone from a clinic that has many rules and regulations, which leads to an attempt on the part of most patents to look like they are conforming to the rules and to minimize any indications, including past acts, that they are not. For example, a recent study using an outpatient methadone population found a rate of APD similar to the one found in the present study. (Nunes et al., 1998). That is

why, as discussed above, many studies of APD take place in prison or inpatient settings; with a captive subject base and access to other types of collateral information, diagnosis of APD is made easier. Even in confined settings it has been observed that what an inmate chose to reveal about himself is often at odds with information contained in his institutional files. (Hare, 1985).

High Rate of APD as Measured by the CPI-So

The high rate of APD as measured by the CPI-So (85%) was an unexpected finding, but not completely surprising given my clinical experience with the study population. Although other studies of substance abusing populations have found high rates of sociopathy using trait-based measures, none have reported findings quite as high as those found in the present study. For example, Tourian et al. (1997) evaluated the validity of the CPI-So in predicting HIV risk behaviors in 289 opiate-dependent, methadone-maintained subjects and found that 40% of the subjects were in the pathological range as measured by the CPI-So. It is not clear what caused the elevated rate in the present study, but one possibility may be that screening a group of long-time heroin users in methadone maintenance treatment for depression has unexpectedly identified a subgroup of APD similar to those described by J.M.A.Weiss et al. (1983) and Howard (1986). J.M.A.Weiss et al. have delineated a subtype of APD characterized by the recognizable traits contained in the classic definition of sociopathy but distinguished by dysphoria, anxiety, agitation, and irritability. Their subtype is akin to Howard's (1986) secondary type of psychopath who is depicted at a trait level as impulsive, socially withdrawn and emotionally disturbed. Although these subtypes have typically been identified after APD is diagnosed, the present study may point to the idea

that in severe addict populations, diagnosing minor depression may also identify comorbid APD.

No Finding of Predictive Utility of the CPI-So

It was also surprising that CPI-So scores did not predict baseline severity or treatment outcome. This is contrary to the findings of Tourian et al. (1997), who found that a low CPI-So score was the strongest predictor of risky drug-use behaviors that might lead to HIV infection. Earleywine et al. (1990) also found that the presence of antisocial personality traits as measured by the CPI-So strongly related to problematic drinking patterns. The lack of findings in the present study can probably be largely attributed to the restricted range of CPI-So scores in the population. The overwhelming majority of the subjects in the present study were in the range that Gough (1994) describes as having severe problems of the socialization function. The present study indicates that lower scores within the severe category (in this case the scores ranged from 8 to 25) do not predict demographic differences, baseline severity or treatment outcome in an outpatient opiate addict population.

Findings Regarding Gender

As predicted there was a difference, although not significant, in rates of DSM-III-R diagnoses of APD between males (18%) and females (10%), while no such gender difference was found using the CPI-So. Notably, among the entire population, CPI-So scores were correlated with DSM-III-R diagnoses of APD at the trend level ($p < .06$). Moreover, scores on the CPI-So were correlated at the .03 level with DSM-III-R diagnoses of APD in males. It is interesting to consider this finding in light of Brooner's (1992) work, which has shown that an early onset of multiple antisocial behaviors was

identified with greater severity of adult antisocial behavior. It appears that male subjects in the present study who have a DSM-III-R diagnosis of APD (which includes a childhood history of conduct disorder) have scores on the CPI-So that would indicate that they are more sociopathic. What this finding means in the present study is unclear, however. There was no other instance, other than their association with each other, where lower CPI-So scores or a DSM-III-R diagnosis of APD was able to predict demographic differences, baseline severity or treatment outcome. In the instant case, identifying a more severe subset of antisocial addicts (those with both an APD diagnosis and very low CPI-So scores) may not have provided any additional information that would be useful in designing treatment in outpatient methadone maintenance populations.

As predicted and supported by the literature, it is clear from these results that the CPI-So is a more gender-neutral measure. In fact, male and female means on the CPI-So were almost identical. Nonetheless, an increased rate of sociopathy among female subjects did not lead to increased predictability in any of the areas assessed. This finding, however, does refute the notion that APD is a predominantly male disorder. A gender neutral measure of sociopathy, such as the CPI-So, substantially increases the number of addicts diagnosed with APD, and this, in turn, may be important for understanding and designing appropriate treatments for substance abuse populations.

FINDINGS REGARDING DEMOGRAPHIC DIFFERENCES

Although no differences were detected among groups according to CPI-So scores or DSM-III-R APD diagnosis in age, years of education, employment status, marital status and race, it is striking to look at the overall characteristics of the

population. Only 18% of the study subjects have any kind of employment, only 30% are married, and the average number of years of education is 11.87, which is less than the equivalent of a high school diploma. These figures match the available statistics for the New York State methadone maintenance population as a whole, except in two areas: gender and race. Caucasians and females are overrepresented in the study population as compared to the overall New York State methadone maintenance population. The higher rate of white subjects can probably be attributed to a high percentage of white people who live in the areas surrounding both the study sites. The higher rates of female in the study may be because women as a whole are more likely to identify themselves as depressed than men are.

CHANGE IN HAMILTON DEPRESSION SCALE (HAM-D) SCORES

The one area where the study population showed improvement was in their HAM-D scores, which decreased over time from baseline to end study, and at the same rate for most subjects regardless of their DSM-III-R diagnosis of APD or CPI-So scores. It is unclear based on the present analysis whether sertraline was the main agent for the change in HAM-D scores in the study population, particularly given that approximately half of the subjects were on placebo, and others who were on medication were not taking it regularly or at therapeutic doses. Moreover, the effect of medication treatment was not within the scope of the present analysis.

Overall mean HAM-D scores for the entire population went from 17.91 at baseline to 12.76 at end study. According to Bech, Kastrup & Rafaelson (1986), the HAM- D criteria for depression are scores of 0 to 7 = no depression, 8 to 15 = minor depression and $\geq$ 16 = major depression. This scale is similar to the one developed

and used by the Substance Abuse Treatment and Research (STARS) group at the New York State Psychiatric Institute, which has not been published to date. The STARS' scale is as follows: 0 to 6 = no depression, 7 to 16 = dysphoric and $\geq$17 = depressed.

Although most of the study population met DSM-III-R criteria for major depression, that diagnosis does not measure the severity of their depression; that function is served by the HAM-D. Therefore, it appears that the study population, in terms of severity, began the study on the bubble between minor depression and major depression and ended the study fully within the minor depression or dysphoric range. This confirms my anecdotal impressions developed when screening most of the study participants for depression that very few individuals endorsed feelings of severe depression, but instead seemed to describe a syndrome characterized by low energy, irritability, some anxiety, some sleep disturbance and an inability to get things done. And while overall subjects did report feeling better, some depression still remained, and none of their improved mood seemed to translate into progress in other areas, such as abstinence from illicit drug use.

Given the general absence of acute depression in the present study and the lingering of dysphoric feelings in many subjects, even at the study's end, it is interesting to consider what other meanings the HAM-D depression scores may have. The results of the present study appear to corroborate the existence of a subgroup of psychopaths identified, as discussed above, by a number of researchers (J.M.A.Weiss et al., 1983; Hinkin et al., 1988; Brooner, Herbst et al., 1993; Whitters et al., 1987). This subgroup, which may represent up to 25% of all patients with APD, is distinguished by

the presence of dysphoric traits such as depression, anxiety, agitation and irritability. Thus, the depression diagnosed and treated in the present study may be more indicative of a "Type II" sociopathy rather than a true Axis I disorder. Walker (1992a) has noted that depression in substance abusing Cluster B populations is characterized by an irritability and impulsivity rather than sadness. He states, "One rarely encounters expressions of sadness, loss or hopelessness, and affective displays of sadness and or grief may be masked by the patient's dominant emotions of anger, hostility and resentment" (Walker, 1992a, p. 229.) Other researchers (Perry & Cooper, 1985) have observed that depressive syndromes in individuals diagnosed with APD as well as borderline personality disorder may have a more characterological basis. Perry & Cooper believe that the prevalence of an overall gratification inhibition may maintain the chronic depressions found so frequently in these populations. They observed, "Devoid of capacities for inner satisfaction, these individuals are prone to frequent depressive episodes." (Perry & Cooper, p. 37.)

SUBSTANCE ABUSE OUTCOME

The study population showed no improvement from baseline to end study in their use of illicit substances. This was true regardless of which lens the subjects were viewed through: time, DSM-III-R diagnosis of APD or CPI-So scores. Two measures analyzed for the purposes of the present study, percentage of positive urines during the course of the study and SUI-Overall Severity, indicate that overall the subjects used illicit substances chronically and that treating their depression had no effect on their drug abuse. The population mean for percentage of positive urines during the course of the study was 71%. This indicates that for all subjects 71% of

their weekly urine samples tested positive for an illicit substance. When the data are further scrutinized, what becomes clear is that the patients who began the study largely abstinent from illicit drug use (a minority of the subjects) remained so throughout the study and those who were using illegal substances at the beginning continued to do so throughout the study.

The SUI-Overall Severity scores for the entire population indicate that subjects reported that they were using an illicit substance approximately two days out of seven; by study's end subjects were reporting using an illicit substance approximately 1.25 days out of seven. This change was not significant by time, DSM-III-R diagnosis of APD or CPI-So scores. Moreover, self-reports in substance abuse populations are notorious for undercounting illicit behaviors, particularly drug use, and this study is probably not an exception.

PSYCHIATRIC OUTCOME OTHER THAN DEPRESSION

There was no significant change in the study population over time, or according to DSM-III-R diagnosis of APD or CPI-So score on either of the two overall psychiatric severity measures analyzed. The overall population mean at baseline for the ASI-Psychiatric Composite Subscale was .49 and for the SCL-90 global score was 19.42, and the overall population mean at end study for the ASI-Psychiatric Composite Subscale was .45 and for the SCL-90 global score was 18.35. It is interesting to note that while the population reported an improvement in depression, they reported no change on two measures that assess overall psychiatric distress and symptomatology.

When comparisons are made between ASI-Psychiatric Composite Subscale scores in the present study and normative data available on male and female opiate users

and outpatient treatment substance abuse populations, the subjects in the present study appear to have a more acute profile. McLellan (1986) reports that the mean ASI-Psychiatric Composite Subscale scores for male and female opiate abusers are .16 and .38, respectively. In outpatient substance abuse treatment settings the mean ASI-Psychiatric Composite Subscale score is .12.

It is interesting to consider the elevated ASI-Psychiatric Composite Subscale scores in the present study in light of findings by substance abuse researchers (discussed above) that greater pretreatment psychiatric severity is related to poorer six month outcome. (Cacciola et al., 1996; McLellan, 1986). There is a degree of psychopathology in this population, reflected by the ASI-Psychiatric Composite Subscale scores both pre- and post treatment, that may not be adequately encompassed by their HAM-D scores, and may be related to the presence of sociopathic traits in most of the subjects, as measured by their CPI-So scores.

ABSENCE OF STATISTICALLY SIGNIFICANT FINDINGS

It may appear odd that with so many analyses (51) performed almost none was significant. While at first glance this statistically improbable finding seems anomalous, it is not when you consider that the variables analyzed were often highly correlated. For example, given the high comorbidity of substance abuse and APD, years of heroin use is going to be related to APD, regardless of how it is measured. Further, the high correlation of many of the variables measured and analyzed in the present study bolsters the proposition that the data may be most useful when it is taken as a whole and viewed as a detailed description of a troubled, often treatment-resistant, population.

WHAT THIS STUDY MAY BE TELLING US

Taken as a whole, the results indicate that there is an underlying psychopathology in the present population that is not accounted for solely by depression. Moreover, depression in this group may be more indicative of a "Type II" antisocial personality than a true Axis I disorder. This is further supported by the elevated ASI-Psychiatric Composite Subscale scores, which did not change over the course of treatment. It would seem that for substance abuse treatment in this population to be more effective, underlying personality dynamics must be taken into account, and treatment designed with these factors in mind. This section now turns to a brief examination of the psychodynamic underpinnings of APD and current treatments for APD.

Many professionals in the chemical dependency field hedge the question of which came first, the pathology or the substance abuse, by answering that both are true. Drugs are used to service the pathology, to make it operate smoothly, and drugs create pathological states. (Liebeskind, 1991). Other commentators assert that psychopathology among drug abusers has been brushed aside as of little relevance by many physicians, sociologists, psychologists and other well-trained professionals (Berger, 1991a). But clinicians who view substance abuse from a psychoanalytic framework agree that significant psychopathology precedes substance abuse. One commentator states, "There is ample, but chaotic, unsystematic, scattered evidence for the clinical adage that heavy drug use is the consequence of, not the origin for, severe psychopathology." (Berger, 1991b, p. 117). Berger (1991a) is convinced that at the root of the failures of the mainstream approaches is the fact that those who compulsively and

heavily use drugs suffer from severe wide range psychopathology or worse. Other researchers contend that it has always been an erroneous cliche that people just slip into substance abuse with no compelling psychiatric history. Clinical reports continually stress that depression, trauma, and unresolved mourning are major precursors or triggers for drug addiction. (Miller, 1994).

Thus, the issue is not whether substance dependence is a cause or consequence of psychopathology, but how we can begin to integrate the findings of the various perspectives and clarify the complex interrelationships between psychopathology and substance dependence. (Khantzian, 1987). As Khantzian further states, "A clinical and psychodynamic perspective provides a basis to understand, integrate, and reconcile some of the findings which at times are contradictions but more often can be seen as complementary and resolvable." (Khantzian, p. 522).

THE PSYCHODYNAMICS OF APD

In general, the childhood histories of sociopaths are characterized by membership in grossly disturbed or chaotic families, with their preoedipal as well as oedipal phases of development rife with exposure to irrational, concrete injustices on a reality level. (Modlin, 1983). Their homes are often characterized by intermittent absence of a parent, relocations, job changes, failures, drinking, violence, and alternating plenty and poverty. As children, they may have been shifted from one home to another, from one set of relatives to another, from one to school to another, etc. Frequently, their fathers were aggressive to the point of brutality, with their abused mothers clinging to her children. The result is that the developing child suffers at the hands of those with whom he most needs to identify himself and consequently internalizes faulty ego and

superego models. In contrast to those destined to develop neuroses and psychoses, the delinquent child withdraws from a specific sector of family and social reality pertaining to identification and prohibitions. (Modlin).

Clinicians most often characterize sociopaths as unable to develop warm, genuine relationships with others, lacking in empathy, and having a callous disregard for the rights and feelings of others. (Thomas-Peter, 1992, p. 338). Schmideberg observed in psychopaths a particular kind of depersonalization related to an inadequate capacity for object relations. She suggested that this resulted from the "consistent inconsistency" of their early objects leaving them as children uncertain and bewildered. (Modlin, 1983). Bursten notes that putting something over on another is a major feature in the character of the psychopath, and argued that they employ projective identification processes to project out the bad introject and then take action against the devalued other. (Wright, 1987). Basically, the psychopath restores meaning in his object world through cruelty to others. (Meloy & Gacono, 1993, p. 369).

Vaillant (1975) refutes both the idea that sociopaths cannot feel and the more sophisticated explanation that a sociopath's anxiety is defended against by the ego mechanism of acting out. Vaillant believes that the sociopath's anxiety, instead of being absent, remains invisible to many observers - including judges and psychiatrists. (Vaillant, p. 179). He believes that what psychiatrists label as hostile manipulation is instead an unconscious effort to control anxiety. In addition, he does not view sociopaths as unfeeling but afraid to feel too much. The sociopath's incapacity to form relationships, according to Vaillant, represents defensive processes not an innate inability. He proposes that close relationships arouse anxiety in sociopaths and they are

terrified of their own dependency, of their very real grievances, and of their fantasies of mutual destruction -- so much so that they either flee relationships or destroy them.

Clinicians working with drug addicts diagnosed with APD have noted certain hallmark traits that characterize this population. One is that, contrary to the total lack of conscience suggested by some commentators, there exist more specific and limited superego lacunae. In addition, there is a greater than usual need for excitement and arousal, as well as a capacity for the creation of chaos among those they are involved with, from professionals attempting to provide treatment to family members. (Prins, 1995, p. 311). Further, this population has been described as:

> exhibiting significant social, cognitive, and emotional deficits. They have difficulty developing and maintaining work, social and love relationships. They view others as threats to be feared or objects to be manipulated. They are dominated by their strong feelings and act impulsively and without rational thought. They show little or no capacity for empathy and are unable to accommodate others' needs. Their emotional range is severely limited and anger is its most prominent feature, particularly masking any feelings that might suggest vulnerability. They show little capacity to think abstractly or logically. (Walker, 1992b, p. 233).

Clinicians note that patients with APD use primitive or low-level defenses that are primarily action oriented to avoid anxiety and relieve tension. These defenses belie an inability to regulate impulses, delay gratification and relate to others except by intimidation and exploitation. (Daum, 1994). Walker (1992a) proposes a model of the APD addict as someone whose primary motivation involves the achievement of desirable mental states in an immediately gratifying manner. In this scheme, "the patient experiences a cycle of a stressful life event (generally the product of his or her own irresponsible conduct) that creates a dysphoria that is perceived as relentless, overwhelming and permanent, and leads to dramatically changed mental states

produced through drug taking and or criminal acts that reinstate the patient's sense of mastery and control." (Walker, 1992a, p. 226).

Relationships are characterized by repetition of a closeness-separation-closeness pattern, a cycle that closely parallels the addictive process itself. Further, there is an impairment of empathic capacity, and others are seen either as tyrants to be avoided or fought, or as instruments of self-gratification. (Walker, 1992a). This lack of trust of others makes building a therapeutic alliance difficult. Kernberg (1992) notes that the patient's conviction that his therapist is dishonest is the most salient aspect of the transference in many of these cases.

The primary psychiatric issue affecting the population identified and explored in the present study may not be depression; instead it appears to be character pathology defined by a primitive, acting out defensive structure, impaired object relations and superego lacunae. When the population is looked at through this lens, it is not surprising that a treatment for depression has little effect on their level of functioning and has no bearing on their drug use. In fact, drug use appears to be the means by which this population copes with a personality structure that does not permit them to self-sooth in a non-destructive manner or receive nurturance from others. It is hard to imagine how a psychopharmacological intervention alone could rehabilitate this type of character pathology combined with chronic substance abuse, and treatment should include psychotherapy interventions as well. Psychotherapy interventions for this population are still in their infancy, but hopefully a greater understanding of the character of chronic substance abusers will help researchers to design more effective treatments.

TREATMENT IMPLICATIONS

As discussed above, the prognosis for patients with APD is bleak. Conversely, commentators have noted that there is substantial heterogeneity among substance abusers with APD and their ability to benefit from treatment. Tennent, G., Tennent, D., Prins and Bedford (1993) surveyed a range of mental health providers regarding the treatability of APD and found that over 90% of those who did respond thought that at least sometimes APD was a remediable condition. In general, there is a lack of empirical research in this area (Prins, 1995), but some researchers believe that secondary antisocial addicts might have better treatment responses. (Messina, Wish & Nemes, 1999). A recent study (Compton, Cottler, Spitznagel, Abdallah & Gallagher, 1998) showed that cocaine users meeting criteria for APD were able to benefit from HIV prevention interventions as much as cocaine users without APD were.

Some researchers have noted that clients with APD need at least a year in treatment to reduce drug use and recidivism. Walker (1992b) believes that successful clinical practice with this population must begin with detoxification followed by stringent monitoring. Cusack & Malaney (1992) note that, despite the fact that antisocial individuals dislike rules, the cornerstone of effective psychiatric treatment of APD is the rapid establishment of firm limits, including confrontation over how their adverse behaviors affects themselves and others. In addition, many clinicians believe that because the patient with APD has little ability to form meaningful one-to-one relationships, group therapy is the modality of choice. (Compton et al., 1998; Prins, 1995). It has also been noted that it is important to involve family members or friends of

the patient in treatment because they provide essential information about problem areas as well as feedback on the patient's progress. (Davidson & Tyrer, 1996).

The general consensus has been that patients with higher levels of psychiatric severity show greater improvement when their treatment includes professional psychotherapy, and that cognitive behavioral therapy is more effective than insight oriented therapy in this population. (Crits-Christoph et al., 1997). Recently published results from the National Institute on Drug Abuse collaborative cocaine treatment study, however, found no evidence that cognitive therapy relative to psychodynamic therapy was more useful for patients with antisocial personality traits or external coping styles. (Crits-Christoph et al., 1999).

A definitive protocol for treatment of the APD substance abuser has yet to be created, but some guidelines for this population have been developed. A structured setting with close patient monitoring, group psychotherapy, possibly in conjunction with individual psychotherapy, collateral contact and a direct, confrontative style appear to be necessary elements for making headway with this population. None of these elements was part of the present study, and given the underlying character pathology of the study population revealed by the results, it is not surprising that subjects made very little progress in treatment.

CONCLUSION

The connection between APD and substance abuse has long been established, but what that link means in terms of baseline severity and treatment outcome has yet to be fully elucidated. The present study proposed that a trait-based measure of APD,

the CPI-So, would provide more predictability of baseline severity and treatment outcome than a behavioral-based measure, a DSM-III-R diagnosis of APD. While the present study found an extremely high rate of APD, including no difference in rates between men and women, when using the CPI-So, it did not, as hypothesized, lead to the CPI-So providing greater predictability of baseline severity or treatment outcome than a DSM-III-R diagnosis of APD. The results do point to an underlying character disorder in the present population, however, which may be more important in understanding substance abuse and designing appropriate treatments than looking at an addict's illegal acts.

There appears to be a growing recognition on the part of treatment providers and the legal system that if you treat the addiction, there will be a reduction in criminal activities, whereas if you punish the crime, without treating the addiction, recidivism is much more likely. This is supported by a pilot program in New York City where offenders who completed court mandated drug treatment instead of serving jail time were rearrested at a rate of 12% versus a rate of 35% for those who were incarcerated. (Finkelstein, 2000). Recently, Chief Judge Judith S. Kaye ordered the New York State courts to begin implementing a program that will require nearly all nonviolent criminals who are drug addicts to be offered treatment instead of jail time. (Finkelstein).

The diversion of addicts from jail into treatment is a good start. Current outpatient substance abuse treatments, however, have been designed without fully considering the underlying character pathology of the population, as well as the very low socioeconomic category that most drug addicts on methadone maintenance, as this study

illustrates, fall into. This is a population that needs multiple interventions, including social and economic rehabilitation. Commentators have noted that what works bests in recalcitrant, multiple-risk populations is intensive and comprehensive interventions, which provide different services (legal, public entitlements, educational, medical and mental health) under one umbrella. (Schorr, 1988). Most methadone clinics are understaffed, employ lay counselors and provide minimal services for patients. It is little wonder, then, that methadone maintenance is perceived as a failure; it is providing Band-Aids for people who need a tourniquet. Although treatment design for dual diagnosis APD addicts is in its infancy, elements of treatment that have been shown to be effective with this population, such as close patient monitoring, group psychotherapy, possibly in conjunction with individual psychotherapy, and frequent collateral contact, are missing from most outpatient methadone settings. As a start, these elements should be incorporated into existing methadone clinics. Further research should also be undertaken to illuminate the meaning of the high rate of sociopathy uncovered in the study population, which can then be incorporated into designing treatment that takes into account underlying character pathology.

TABLE 1. ***SAMPLE CHARACTERISTICS***

Demographics (n=82)	M (SD)	Range	NYS**
Age	39.41(7.60)	24-53	25-44***
Years of Education	11.87(1.95)	6-18	52****
% Male	57		70
% Married	29.9		NA*****
% Employed	17.8		11
Race %: African American	16		26
Hispanic	14		50
Caucasian	46		22
Other	1		2
CPI-SO (Overall)*	19.06(5.14)	8-31	NA
CPI Males	19.22(5.59)	8-31	NA
CPI Females	18.83(4.50)	11-27	NA
% of Current APD	14		NA
% Current APD Males	18		NA
% Current APD Females	10		NA
Years of heroin use	11.66(7.94)	0-30	NA
Years of cocaine use	9.04(7.07)	0-30	NA
Years of benzodiazepine use	5.15(7.94)	0-27	NA

*No significant differences between gender.
**New York States statsicits on overall methadone services population (1997).
***77% of the New York State overall methadone services population falls into this age range.
****52% of the New York State overall methadone services population are high school graduates
*****NA = Not Available

TABLE 2. ***FREQUENCY OF CPI-SO SCORES BY GENDER***

CPI-So Score	Frequency-Male	Frequency-Female	Cumulative %
8.00	1	0	1.5
9.00	1	0	3.0
11.00	1	1	6.0
12.00	3	0	10.6
13.00	1	4	18.2
14.00	0	2	21.2
15.00	2	1	25.8
16.00	4	2	34.8
17.00	2	2	40.9
18.00	4	1	48.4
19.00	1	3	54.5
20.00	4	2	63.6
21.00	1	3	69.7
22.00	2	0	72.7
23.00	1	4	80.3
24.00	2	0	83.3
25.00	1	0	84.8
26.00	3	1	90.9
27.00	1	2	95.4
29.00	2	0	98.4
31.00	1	0	100
Total	38	28	

TABLE 3.*CPI-So Scores By DSM-III-R APD Diagnosis-Total Sample N(%)*

California Personality Inventory-SO	Antisocial Personality Disorder-Total Sample					
	None	Subthreshold	Current	X^2	df	p
Least Sociopathic	15 (39)	3 (25)	0 (0)	9.12	4	.06
Mid-level Sociopathic	13 (34)	6 (50)	4 (36)			
Most Sociopathic	10 (26)	3 (25)	6(64)			

TABLE 3A.*CPI-So Scores By DSM-III-R APD Diagnosis-Male Only N(%)*

California Personality Inventory-SO	Antisocial Personality Disorder-Male					
	None	Subthreshold	Current	X^2	df	p
Least Sociopathic	7 (44)	3 (38)	0 (0)	10.68	4	.03
Mid-level Sociopathic	6 (38)	4 (50)	2 (25)			
Most Sociopathic	3 (19)	0 (13)	5 (75)			

TABLE 3B.*CPI-So Scores By DSM-III-R APD Diagnosis-Female Only N(%)*

California Personality Inventory-SO	Antisocial Personality Disorder-Female					
	None	Subthreshold	Current	X^2	df	p
Least Sociopathic	6 (33)	0 (0)	0 (0)	3.33	4	.50
Mid-level Sociopathic	7 (39)	2 (50)	2 (67)			
Most Sociopathic	5 (28)	2 (50)	1 (33)			

TABLE 3C.*Sample By DSM-III-R Adult-APD and Conduct Disorder Diagnoses N(%)*

Sample	Adult Antisocial Personality Disorder			Conduct Disorder		
Gender	None	Subthreshold	Current	None	Subthreshold	Current
Male	21(53)	10(25)	9(23)	30(71)	3(7)	9(21)
Female	21(72)	4(14)	4(14)	17(59)	7(24)	5(17)
Total	42(61)	14(20)	13(19)	47(66)	10(14)	14(20)

TABLE 4. ***A Comparison of Patient Demographic Variables among CPI-So Classifications***

	CPI-So Classification**					
Demographics	**Low (n=20)**	**Medium (n=25)**	**High (n=21)**	**F or X^2**	**df**	**p**
	M (SD)	M (SD)	M (SD)			
Age	41.63(7.45)	38.70(6.66)	39.28(9.22)	.81	2,57	.45
Years of Education	12.35 (2.41)	11.84 (1.72)	11.43 (1.75)	1.13	2,63	.33
Gender (% Males)	65	52	57	0.77	2	.68
Employment Status (% Employed)	26	9	19	2.11	2	.35
Marital Status (% Married)	35	16	38	3.26	2	.20
Race %: African American	25	20	14	3.70	2	.72
Hispanic	15	24	14			
Caucasian	60	52	71			
Other	0	4	0			

**CPI-So Low = Scores $\geq$ 21; CPI-So Medium = Scores 17 – 21; CPI-So High = Scores $\leq$ 16

TABLE 5. *A COMPARISON OF PATIENT DEMOGRAPHIC VARIABLES AMONG DSM-III-R DIAGNOSES OF APD*

DSM-III-R Diagnoses of APD						
Demographics	**None (n=52)**	**Sub-Threshold (n=7)**	**Present (n=10)**	**F or X^2**	**df**	**p**
	M (SD)	M (SD)	M (SD)			
Age	40.34(7.34)	39.60(8.79)	38.10(7.67)	.37	2,56	.69
Years of Education	12.10 (2.21)	12.43 (.79)	11.20 (1.69)	.98	2,62	.38
Gender (% Males)	56	57	70	0.70	2	.71
Employment Status (% Employed)	17	50	90	4.28	2	.12
Marital Status (% Married)	35	86	80	1.92	2	.38
Race %: African American	23	43	10	4.39	6	.63
Hispanic	17	0	30			
Caucasian	58	57	60			
Other	2	0	0			

TABLE 6. ***A COMPARISON OF BASELINE SEVERITY MEASURES AMONG CPI-SO CLASSIFICATIONS***

Baseline Severity Measures	CPI-So Classification** Low (n=20)	Medium (n=25)	High (n=21)	F	df	p
	M (SD)	M (SD)	M (SD)			
Hamilton Depression Scale	17.96 (4.50)	18.64 (3.96)	17.00 (3.15)	1.06	2, 68	.35
Substance Use Inventory - Overall Severity	.32 (.39)	.18 (.26)	.30 (.30)	1.56	2,66	.22
SCL-90 - Global Score	18.79 (7.08)	20.46 (6.42)	18.78 (4.33)	.56	2, 61	.58
ASI-Psychiatric Composite Subscale Score	.46 (.13)	.50 (.11)	.51 (.12)	1.24	2, 62	.30
Years of Heroin Use	11.95 (7.27)	11.87 (8.40)	11.26 (8.50)	.05	2, 63	.95
Other Drugs of Abuse						
Cocaine	8.08 (6.55)	9.41 (6.65)	9.39 (7.62)	.17	2, 45	.85
Benzodiazepines	5.00 (7.89)	5.33 (7.70)	5.33 (9.50)	.004	2, 23	1.00

**CPI-So Low = Scores > 21; CPI-So Medium = Scores 17 – 21; CPI-So High = Scores ≤ 16

TABLE 7. ***A COMPARISON OF BASELINE SEVERITY MEASURES AMONG DSM-III-R DIAGNOSES OF APD***

DSM-III-R Diagnoses of APD						
Baseline Severity Measures	**None (n=52)**	**Subthreshold (n= 7)**	**Present (n=10)**	**F**	**df**	**p**
	M (SD)	M (SD)	M (SD)			
Hamilton Depression Scale	17.94(3.50)	15.86(3.76)	18.20(3.65)	1.15	2,66	.32
Substance Use Inventory - Overall Severity	.27(.35)	.23(.34)	.31(.36)	.10	2,63	.91
SCL-90 - Global Score	19.02(5.41)	16.55(2.68)	21.05(7.99)	1.00	2,54	.37
ASI-Psychiatric Composite Subscale Score	.47(.11)	.48(.14)	.56(.13)	2.66	2,60	.08
Years of Heroin Use	11.51(7.87)	11.17(8.08)	14.00(9.67)	.41	2,60	.67
Other Drugs of Abuse						
Cocaine	8.71(7.21)	10.25(11.53)	11.56(6.33)	.54	2,41	.59
Benzodiazepines	5.18(7.54)	3.67(3.06)	9.75(13.52)	.59	2,21	.56

TABLE 8. ***A COMPARISON OF OUTCOME MEASURES AMONG CPI-SO CLASSIFICATIONS***

	CPI-So Classification**					
Outcome Measures	**Low (n=20)**	**Medium (n=25)**	**High (n=21)**	**F**	**df**	**p**
	M (SD)	M (SD)	M (SD)			
Hamilton Depression Scale	12.39(6.36)	12.20(5.71)	13.78(5.88)	.026	2,68	.97
Substance Use Inventory - Overall Severity	.15(.19)	.16(.36)	.30(.36)	1.67	2,66	.20
SCL-90 - Global Score	18.84(8.79)	18.51(5.62)	17.70(5.38)	.24	2,61	.79
ASI-Psychiatric Composite Subscale Score	.44(.18)	.43(.16)	.49(.21)	.50	2,51	.61
% Positive Drug and Alcohol Urine Screens	.73(.41)	.69(.43)	.72(.40)	.04	2,58	.96
Number of Weeks in Study	12.43(6.44)	12.08(6.07)	12.74(4.68)	.08	2,68	.93

**CPI-So Low = Scores $\geq$ 21; CPI-So Medium = Scores 17 – 21; CPI-So High = Scores $\leq$ 16

TABLE 9. ***A COMPARISON OF OUTCOME MEASURES AMONG DSM-III-R DIAGNOSES OF APD***

	DSM-III-R APD Diagnosis					
Outcome Measures	**None (n=52)**	**Subthreshold (n=7)**	**Present (n=10)**	**F**	**df**	**p**
	M (SD)	M (SD)	M (SD)			
Hamilton Depression Scale	12.23(6.22)	13.43(6.00)	13.40(3.81)	.21	2,66	.81
Substance Use Inventory - Overall Severity	.16(.23)	.27(.46)	.22(.29)	.14	2,63	.87
SCL-90 - Global Score	18.61(6.72)	16.91(6.97)	19.64(6.57)	.63	2,54	.54
ASI-Psychiatric Composite Subscale Score	.45(.17)	.37(.22)	.49(.18)	1.49	2,47	.24
% Positive Drug and Alcohol Urine Screens	.74(.40)	.86(.16)	.70(.48)	.33	2,58	.72
Number of Weeks in Study	13.31(6.01)	10.57(6.19)	12.60(1.90)	.74	2,66	.48

APPENDIX A: CALIFORNIA PERSONALITY INVENTORY SOCIABILITY SUBSCALE

ID#_____

INTERVIEWER#_____ DATE_____

EVALUATION# 1 2 3

Read each statement, decide how you feel about it and then mark your answer. If you agree with a statement, or feel that it is true about you, answer TRUE. If you disagree with a statement, or feel that it is not true about you, answer FALSE. Be sure to answer either TRUE or FALSE for every statement, even if you have to guess at some.

		True	False
1.	I often felt I made the wrong choice in my occupation.....	T	F
2.	When I was going to school I played hookey quite often.....	T	F
3.	I think Lincoln was greater than Washington.....	T	F
4.	I would do almost anything on a dare.....	T	F
5.	With things going as they are, it's pretty hard to keep up hope of amounting to something.....	T	F
6.	I think I am stricter about right and wrong than most people.....	T	F
7.	I am somewhat afraid of the dark.....	T	F
8.	My parents have often disapproved of my friends.....	T	F
9.	My home life was always happy.....	T	F
10.	I often act on the spur of the moment without stopping to think.....	T	F
11.	My parents have generally let me make my own decisions.....	T	F
12.	I would rather go without something than ask for a favor.....	T	F
13.	I have had more than my share of things to worry about.....	T	F
14.	When I meet a stranger I often think that he or she is better than I am.....	T	F
15.	Before I do something I try to consider how my friends will react.....	T	F
16.	I have never been in trouble with the law.....	T	F

17. In school I was sometimes sent to the principal's office because I had misbehave..... T F
18. Most of the time I feel happy..... T F
19. I often feel as if I have done something wrong or wicked..... T F
20. I have often gone against my parents' wishes..... T F
21. I often think about how I look and what impression I am making on others..... T F
22. I have never done any heavy drinking..... T F
23. I find it easy to "drop" or "break with" a friend..... T F
24. I get nervous when I have to ask someone for a job..... T F
25. Sometimes I used to feel that I would like to leave home..... T F
26. I never worry about my looks..... T F
27. My home life was always very pleasant..... T F
28. I seem to do things that I regret more often than other people..... T F
29. My table manners are not quite as good at home as when I am out in company..... T F
30. It is pretty easy for people to win arguments with me..... T F
31. I know who is responsible for most of my troubles..... T F
32. I get pretty discouraged with the law when a smart lawyer gets a criminal free..... T F
33. I have used alcohol excessively..... T F
34. I sometimes wanted to run away from home..... T F
35. Life usually hands me a pretty raw deal..... T F
36. People often talk behind my back..... T F

37. I would never play cards (poker) with a stranger..... T F
38. I don't think I'm quite as happy as others seem to be..... T F
39. I used to steal sometimes as a youngster..... T F
40. My home as a child was less peaceful and quiet than those of most people..... T F
41. As a child in school I used to give the teachers lots of trouble..... T F
42. If the pay was right I would like to travel with a circus or carnival..... T F
43. I never cared much for school..... T F
44. The members of my family were always very close to each other..... T F
45. My parents never really understood me..... T F
46. A person is better off not to trust anyone..... T F

APPENDIX B: STRUCTURED CLINICAL INTERVIEW ANTISOCIAL PERSONALITY DISORDER MODULE

ANTISOCIAL PERSONALITY DISORDER	ANTISOCIAL PERSONALITY DISORDER CRITERIA				
	A. Current age at least 18.	?	1		3
	B. Evidence of Conduct Disorder with onset before age 15, as indicated by a history of 3 or more of the following:				
Before you were 15, did you often skip school? How often?	(1) was often truant	?	1	2	3
Before you were 15, did you run away from home and stay out overnight? Was that more than once? (With whom were you living at the time?)	(2) ran away from home overnight at least twice while living in parental or parental surrogate home (or once without returning)	?	1	2	3
Before you were 15, did you start fights? How often?	(3) often initiated physical fights	?	1	2	3
Before you were 15, did you use a weapon in a fight? How many times?	(4) used a weapon in more than one fight	?	1	2	3

?=inadequate information 1=absent or false 2=questionable 3=unequivocally present or true

Before you were 15, did you ever force someone to have sex with you.	(5) forced someone into sexual activity with him or her	? 1 2 3
Tell me about it.		
Before you were 15, did you you ever hurt an animal on purpose.	(6) was physically cruel to animals	? 1 2 3
What's the worst thing you ever did?		
Before you were 15, did you ever hurt another person on purpose? (other than in a fight.)	(7) was physically cruel to other people	? 1 2 3
What's the worst thing you ever did?		
Before you were 15, did you deliberately damage things that weren't yours?	(8) deliberately destroyed others' property (other than firesetting)	? 1 2 3
What did you do?		
Before you were 15, did you set fires?	(9) deliberately engaged in firesetting	? 1 2 3
Tell me about that.		
Before you were 15, did you lie a lot?	(10) often lied (other than to avoid physical or sexual abuse)	? 1 2 3
What would you lie about?		

? = inadequate information   1 = absent or false   2 = subthreshold   3 = threshold or true

Before you were 15, did you ever steal things? Tell me about it. (Did you ever forge anyone's signature?)	(11) has stolen without confrontation of a victim on more than one occasion including forgery)	?	1	2	3
Before you were 15, did you ever rob or mug someone? Tell me about it.	(12) has stolen with confrontation of a victim (e.g., mugging, purse-snatching, extortion, armed robbery)	?	1	2	
	AT LEAST THREE SXS ARE CODED "3"		1		3

NX OF CONDUCT DISORDER

CONTINUE

How old were you when you began to (list non-Conduct Disorder sxs.)?

Age first symptom appeared ___

Age first had at least three symptoms ___

"PRIMARY/SECONDARY CONDUCT DISORDER"

You said you first began using drugs (specific drug or alcohol) regularly (at least 3 times per week for at least a month) at age __ __.

So that means the problems we just talked about (list own Conduct Disorder sxs.):

1 = began before regular use

2 = began only after regular use

3 = unclear which came first

4 = patient cannot remember __ (col #)

IF SAME AGE OR ONSET IS UNCLEAR, ASK:

Can you recall which came first?

At the time you began to (list own Conduct Disorder sxs.), were you already using drugs or alcohol regularly (at least 3 times per week for at least a month)?

NOTE: AGE OF ONSET OF CONDUCT DISORDER AND AGE OF FIRST REGULAR SUBSTANCE USE.

CIRCLE ONE:

1 = Conduct Disorder clearly began before regular substance use (i.e. drugs or alcohol) (PRIMARY)

4 = 1 is probably true, but unclear (PROBABLE PRIMARY)*

5 = Conduct Disorder clearly has never persisted independent of regular substance use, i.e. began after onset of regular substance use (SECONDARY)

6 = 5 is probably true, but unclear (PROBABLE SECONDARY)

9 = relative timing of onset of Conduct Disorder and regular substance use is unclear

0 = never had Conduct Disorder

*Onset simultaneous and/or clinical sense is Conduct Disorder is primary, i.e. preceded onset of regular substance use.

? = inadequate information   1 = absent or false   2 = subthreshold   3 = threshold or true

Now I am going to ask you questions about yourself since you were 15.

C. A pattern of irresponsible and antisocial behavior since the age of 15, as indicated by at least 4 of the following:

(1) is unable to sustain consistent work behavior, as indicated by any of the following (including similar behavior in academic settings if the person is a student): ? 1 2 3

How much of the time in the last five years were you not working?

IF MORE THAN SIX MONTHS:

Why?

(a) significant unemployment for six months or more in five years when expected to work and work was available

When you were working, were you often absent?

IF YES: Why?

(b) repeated absences from work, unexplained by illness in self or family

Did you ever walk off a job without having another one to go to?

IF YES: How many times did this happen?

(c) abandonment of several jobs without realistic plans for others

Have you done things that are against the law--even if you weren't caught--like stealing, selling drugs, fencing, pimping, prostituting, or committing a felony?

Have you ever been arrested?

(2) fails to conform to social norms with respect to lawful behavior, as indicated by repeatedly performing antisocial acts that are grounds for arrest (whether arrested or not), e.g., destroying property, harassing others, stealing, pursuing an illegal occupation ? 1 2 3

? = information [illegible] 1 = false 2 = [illegible] 3 = threshold or true

(Since you were 15) Have you been in any fights that came to swapping blows? (How often?) Have you ever hit or thrown things at your (SPOUSE/PARTNER)? (How often?) Have you ever hit a child, yours or someone else's, so hard that he or she had bruises or had to stay in bed or see a doctor?	(3) is irritable and aggressive, as indicated by repeated physical fights or assaults (not required by one's job or to defend someone or oneself), including spouse- or child-beating	?	1	2	3
Have you ever owed people money and not paid them back? (How often?) What about not paying child support, or not giving money to children who depended on you?	(4) repeatly fails to honor financial obligations, as indicated by defaulting on debts or failing to provide child support or support for other dependents on a regular basis	?	1	2	3
	(5) fails to plan ahead, or is impulsive, as indicated by one or both of the following:	?	1	2	3
Other than being in a vacation, have you ever traveled around without knowing where you were going to stay or work? Was there ever a time when you had no regular place to live? (For how long?)	(a) traveling from place to place without a preplanned job or clear goal for the period of travel or clear idea about when the travel will terminate (b) lack of a fixed address for a month or more				

[illegible] 1 = [illegible] 2 = [illegible] 3 = [illegible]

Have you done a lot of lying since you were 15?	(6) has no regard for the truth, as indicated by repeated lying, use of aliases, "conning" others for personal profit or pleasure	?	1	2 3
Have you ever used an alias or pretended you were someone else?				
Have you often "conned" others to get what you want?				
Did you ever drive a car when you were drunk?	(7) is reckless regarding his or her own or others' personal safety, as indicated by driving while intoxicated, recurrent speeding	?	1	2 3
How often have you gotten a ticket for speeding?				
IF HAS BEEN A PARENT OR GUARDIAN:				
Has anyone ever said that you weren't taking proper care of a child of yours (or a child you were responsible for)...	(8) if a parent or guardian, lacks ability to function as a responsible parent, as indicated by one or more of the following:	?	1	2 3
...like not giving enough food or...	(a) malnutrition of child			
...keeping the child clean enough or...	(b) child's illness resulting from lack of minimal hygiene			
...getting medical care when the child was sick or...	(c) failure to obtain medical care for a seriously ill child			
...leaving the child with neighbors because you weren't able to take care of the child at your home or...	(d) child's dependence on neighbors or nonresident relatives for food or shelter			
...not arranging for anyone to take care of the child when you were away or...	(e) failure to arrange for a caretaker for young child when parent is away from home			
...running out of money to take care of the child because you spent the money on yourself?	(f) repeated squandering, on personal items, of money required for household necessities			
Have any of these things ever happened?				

Appropriate information: 1 = false 2 = suspected 3 = confirmed or true

What's the longest period of time you were sexually involved with one person without having sex with anyone else?

Do you feel it was OK for you to have (stolen, hit, hurt, defaced/OTHER ANTISOCIAL ACT)?

(9) has never sustained a totally monogamous relationship for more than one year	?	1	2	3
(10) lacks remorse (feels justified in having hurt, mistreated, or stolen from another)	?	1	2	3
AT LEAST FOUR SXS ARE CODED "3"		1		3

ANTI-SOCIAL P.D.

IF SUBJECT MET CRITERIA FOR CHILDHOOD CONDUCT DISORDER, AS WELL AS ADULT ASP, END SCID HERE. (IF HE/SHE MET CRITERIA FOR ADULT ASP, BUT NOT CD, CONTINUE)

How old were you when you began to (list own sxs. of adult ASP.)?

Age first sx. appeared __ __

Age first has at least 4 symptoms of adult ASP __ __

PRIMARY/SECONDARY ANTISOCIAL PERSONALITY DISORDER

You said you first began using drugs (specific drug or alcohol) regularly) (at least 3 times per week for at least a month) at age __ __.

So that means you began to (list own ASP symptoms/behaviors):

1 = before regular substance use

2 = only after regular substance use

3 = unclear which came first

4 = patient cannot remember. __ (col #)

IF SAME AGE OR ONSET IS UNCLEAR, ASK:

Can you recall which came first?

At the time you began to (list own ASP sxs./behaviors), were you already using drugs or alcohol regularly (at least 3 times per week for at least a month)?

NOTE: AGE OF ONSET OF ASP AND AGE OF FIRST REGULAR SUBSTANCE USE.

CIRCLE ONE:

1 = Antisocial sxs. clearly began before regular substance use (i.e. drugs or alcohol) [PRIMARY]

3 = 1 is probably true, but unclear [PROBABLE PRIMARY]*

5 = Antisocial sxs. clearly have never persisted independent of regular substance use [SECONDARY]

6 = 5 is probably ture, but unclear [PROBABLE SECONDARY]

9 = relative timing of onset of ASP sxs. and regular substance use is unclear

0 = never had Antisocial Personality Disorder

*Onset simultaneous and/or clinical sense is ASP is primary (i.e. preceded onset of regular substance use.)

? = inadequate information   1 = absent or false   2 = subthreshold   3 = threshold or true

REFERENCES

Allison, M., Hubbard, R.L. & Ginzburg, H.M. (1985). *Suicide and depression among drug abusers* (Treatment Research Monograph. DHHS Publication No. ADM 85-1411). Rockville, MD: National Institute on Drug Abuse.

Alterman, A.I., Rutherford, M.S., Cacciola, J.S., McKay, J.R. & Woody, G.E. (1996). Response to methadone maintenance and counseling in antisocial patients with and without major depression. *Journal of Nervous and Mental Disease*, 184, 695 -702.

Alterman, A.I., Brown, L.S., Zaballero, A. & McKay, J.R. (1994). Interviewer severity ratings and composite scores of the ASI: a further look. *Drug and Alcohol Dependence*, 34, 201 – 209.

Alterman, A.I. & Cacciola, J.S. (1991). The antisocial personality disorder diagnosis in substance abusers: Problems and issues. *Journal of Nervous and Mental Disease*, 179, 401 -409.

Alterman, A.I. (1988). Patterns of familial alcoholism, alcoholism severity, and psychopathology. *Journal of Nervous and Mental Disease*, 176, 167 - 175.

Alvarez, L. (1995, August 14). The middle class rediscovers heroin. *The New York Times*, B3.

American Psychiatric Association. (1987). *The Diagnostic and Statistical Manual of Mental Disorders, Third Edition, Revised.* Washington, DC : Author.

Berger, L.S. (1991a). Viewing society from a psychoanalytic perspective. In *Substance Abuse as Symptom* (pp 53 - 79). Hillsdale, New Jersey: The Analytic Press.

Berger, L.S. (1991b). Substance abuse: Psychopathology, therapies and therapists. In *Substance Abuse as Symptom* (pp 115 - 141). Hillsdale, New Jersey: The Analytic Press.

Blackburn, R. (1988). On moral judgements and personality disorders: The myth of psychopathic personality revisited. *British Journal of Psychiatry*, 153, 505 - 512.

Blatt, S.J., Berman, W., Bloom-Feshbach, S., Sugarman, A., Wilber, C. & Kleber, H.D. (1984). Psychological assessment of psychopathology in opiate addicts. *Journal of Nervous and Mental Disease*, 172, 156 - 165.

Blatt, S.J., Rounsaville, B., Eyre, S.L. & Wilber, C. (1984). The psychodynamics of opiate addiction. *Journal of Nervous and Mental Disease*, 172, 342 - 352.

Brooner, R.K., King, V.L., Kidorf, M., Schmidt, C.W. & Bigelow, G.E. (1997). Psychiatric and substance use comorbidity among treatment-seeking opiod abusers. *Archives of General Psychiatry*, 54, 71 – 80.

Brooner, R.K., Greenfield, L., Schmidt, C.W. & Bigelow, G.E. (1993). Antisocial personality disorder and HIV infection among intravenous drug abusers. *American Journal of Psychiatry*, 150, 53 58.–

Brooner, R.K., Herbst, J.H., Schmidt, C.W., Bigelow, G.E. & Costa, P. T. (1993). Antisocial personality disorder among drug abusers: Relations to other personality diagnoses and the five-factor model of personality. *Journal of Nervous and Mental Disease*, 181, 313 – 319.

Brooner, R.K. (1992). Antisocial behavior of intravenous drug abusers: implications for diagnosis of antisocial personality disorder. *American Journal of Psychiatry*, 149, 482 – 487.

Bryant, K.J., Rounsaville, B., Spitzer, R.L & Williams, J.B.W. (1992). Reliability of dual diagnosis: Substance dependence and psychiatric disorders. *Journal of Nervous and Mental Disease*, 180, 251 – 257.

Carroll, B.J., Fielding, J.M. & Blashki, T.G. (1973). Depression ratings scales: A critical review. *Archives of General Psychiatry*, 28, 361 – 366.

Cacciola, J.S., Rutherford, M.J., Alterman, A.I., McKay, J.R. & Snider, E.C. (1996). Personality disorders and treatment outcome in methadone maintenance patients. *Journal of Nervous and Mental Disease*, 184, 234 - 239.

Cacciola, J.S., Alterman, A.I., Rutherford, M.J. & Snider, E.C. (1995). Treatment response of antisocial substance abusers. *Journal of Nervous and Mental Disease*, 183, 166 - 171.

Cacciola, J.S., Rutherford, M.J., Alterman, A.I., & Snider, E.C. (1994). An examination of the diagnostic criteria for antisocial personality disorder in substance abusers. *Journal of Nervous and Mental Disease*, 182, 517 - 523.

Compton, W.N., Cottler, L.B., Spitznagel, E.L., Abdallah, A.B., & Gallagher, T. (1998). Cocaine users with antisocial personality improve HIV risk behaviors as much as those without antisocial personality. *Drug and Alcohol Dependence*, 49, 239 – 247.

Cooney, N.L., Kadden, R.M. & Litt, M.D. (1990). A comparison of methods for assessing sociopathy in male and female alcoholics. *Journal of Studies on Alcohol*, 51, 42 - 48.

Cottler, L.B. , Price, R.K., Compton, W.M. & Mager, D.E. (1995). Subtypes of adult antisocial behavior among drug abusers. *Journal of Nervous and Mental Disease*, 83, 154 –161.

Craig, R. J. (1979a). Personality Characteristics of heroin addicts: A review of the empirical literature with critique-Part I. *International Journal of the Addictions*, 14, 513 – 532.

Craig, R. J. (1979b). Personality Characteristics of heroin addicts: A review of the empirical literature with critique-Part II. *International Journal of the Addictions*, 14, 607 – 626.

Crits-Christoph, P. Siqueland, L., Blaine, J., Frank, A., Luborsky, L, Onken, L.S., Muenz, L.R., Thase, M.E., Weiss, R.D., Gastfriend, D.R., Woody, G.E., Barber, J.P., Butler, S.F., Daley, D., Salloum, I., Bishop, S., Najavits, L.M., Lis, J., Mercer, D., Griffin, M.L., Moras, K. & Beck, A.T. (1999). Psychosocial treatments for cocaine dependence: National Institute on Drug Abuse collaborative cocaine treatment study. *Archives of General Psychiatry*, 56, 493 – 502.

Crits-Christoph, P. Siqueland, L., Blaine, J., Frank, A., Luborsky, L, Onken, L.S., Muenz, L.R., Thase, M.E., Weiss, R.D., Gastfriend, D.R., Woody, G.E., Barber, J.P., Butler, S.F., Daley, D., Bishop, S., Najavits, L.M., Lis, J., Mercer, D., Griffin, M.L., Moras, K. & Beck, A.T. (1997). The National Institute on Drug Abuse collaborative cocaine treatment study: rationale and methods. *Archives of General Psychiatry*, 54, 721 – 726.

Cusack, J.R. & Malaney, K.R. (1992). Patients with antisocial personality disorder: are they bad or mad? *Postgraduate Medicine*, 91, 341 – 355.

Dackis, C.A. & Gold, M.S. (1983). Opiate addiction and depression - cause or effect? *Drug and Alcohol Dependence*, 11, 105 - 109.

Darke, S., Swift, W. & Hall, W. (1994). Prevalence, severity and correlates of psychological morbidity among methadone maintenance clients. *Addiction*, 89, 211 - 217.

Daum, A.L. (1994). The disruptive antisocial patient: management strategies. *Nursing Management*, 25, 46 –51.

Davidson, K.M. & Tyrer, P. (1996). Cognitive therapy for antisocial and borderline personality disorders; single case study series. *British Journal of Clinical Psychology*, 35, 413 – 429.

DeJong, C.A.J., van den Brink, W., Harteveld, F.M. & van der Wielen, E. G. M. (1993). Personality disorders in alcoholics and drug addicts. *Comprehensive Psychiatry*, 34, 87 – 94.

Derogatis, L.R. (1983). *SCL-90-R: Administration, Scoring and Procedures Manual, II.* Towson, MD: Clinical Psychiatric Research.

Dinwiddie, S.H., Reich, T. & Cloninger, C.R. (1992). Psychiatric comorbidity and suicidality among intravenous drug users. *Journal of Clinical Psychiatry*, 53, 364 - 369.

Donovan, J.M., Soldz, S., Kelley, H.F. & Penk, W.E. (1998). Four Addictions: the MMPI and discriminant function analysis. *Journal of Addictive Diseases*, 17, 41 – 55.

Earleywine, M., Finn, P.R., & Martin, C.S. (1990). Personality risk and alcohol consumption: A latent variable analysis. *Addictive Behaviors*, 15, 183 - 187.

Finkelstein, K.E. (2000, June 23). New York to offer most addicts treatment instead of jail terms. *The New York Times*, pp. A1, B4.

Flynn, P.M., Craddock, S.G., Luckey, J.W., Hubbard, R.L. & Dunteman, G.H. (1996). Comorbidity of antisocial personality and mood disorders among psychoactive substance-dependent treatment clients. *Journal of Personality Disorders*, 10, 56 – 67.

Gerstley, L., Alterman, A., McLellan, A.T. & Woody, G.E. (1990). Antisocial personality disorder in patients with substance abuse disorders: A problematic Diagnosis? *American Journal of Psychiatry*, 147, 173 - 178.

Giancola, P.R., Peterson, J.B. & Pihl, R.O. (1993). Risk for alcoholism, antisocial behavior, and response preservation. *Journal of Clinical Psychology*, 49, 423 - 428.

Glenn, S.W. & Nixon, S.J. (1996). Investigation of Cloninger's subtypes in a male alcoholic sample: Applications and implications. *Journal of Clinical Psychology*, 52, 219 - 230.

Goldstein, R.B., Powers, S.I., McCusker, J., Lewis, B.F., Bigelow, C. & Mundt, K.A. (1998). Antisocial behavioral syndromes among residential drug abuse treatment clients. *Drug and Alcohol Dependence*, 49, 201 - 216.

Goldstein, R.B., Powers, S.I., McCusker, J., Lewis, B.F., Mundt, K.A. & Bigelow, C. (1996a). Lack of remorse in antisocial personality disorder among drug abusers in residential treatment. *Journal of Personality Disease*, 10, 321 - 334.

Goldstein, R.B., Powers, S.I., McCusker, J., Lewis, B.F., Mundt, K.A., Lewis, B.F. & Bigelow, C. (1996b). Gender differences in manifestations of antisocial personality disorder among residential drug abuse treatment clients. *Drug and Alcohol Dependence*, 41, 35 - 45.

Gopnik, A. (1998, May 18). The invention of Oscar Wilde. *The New Yorker*, 74, 78 – 88.

Gough, H.G. (1994). Theory, development, and interpretation of the CPI Socialization Scale. *Psychological Reports*, 75, 651 – 700.

Haertzen, C.A., Martin, W.R., Hewett, B.B. & Sandquist, V. (1978). Measurement of psychopathy as a state. *Journal of Psychology*, 100, 201 - 214.

Hare, R.D. (1985). Comparison of procedures for the assessment of psychopathy. *Journal of Consulting and Clinical Psychology*, 53, 7 - 16.

Harpur, T.J., Hare, R.D. & Hakstian, A.R. (1989). Two-factor conceptualization of psychopathy: Construct validity and assessment implications. *Psychological Assessment*, 1, 6 - 17.

Hauser, J. & Rybakowski, J. (1997). Three clusters of male alcoholics. *Drug and Alcohol Dependence*, 48, 243 - 250.

Hemphill, J.F., Hart, S.D. & Hare, R.D. (1994). Psychopathy and substance use. *Journal of Personality Disorders*, 8, 169 - 180.

Hinkin, C.H., Kahn, M.W. & Connelly, R.F. (1988). The indigent alcoholic: Personality and psychopathology. *The International Journal of the Addictions*, 23, 1271 - 1280.

Howard, R.C. (1986). Psychopathy: A psychobiological perspective. *Personality and Individual Differences*, 7, 795 -806.

Johnson, B.D. & Muffler, J. (1992). Sociocultural aspects of drug use and abuse in the 1990s. In J.H. Lowinson, P. Ruiz, R. Millman & J. Langrod (Eds.), *Substance Abuse, A Comprehensive Textbook, Second Edition*. (pp. 118 – 137). Philadelphia: Williams and Wilkins

Kadden, R.M., Cooney, N.L. & Getter, H. (1989). Matching alcoholics to coping skills or interactional therapies: Posttreatment results. *Journal of Consulting and Clinical Psychology*, 57, 698 – 704.

Kandel, D.B., Davies, M., Karus, D. & Yamaguchi, K. (1986). The consequences in young adulthood of adolescent drug involvement. *Archives of General Psychiatry*, 43, 746 - 754.

Kendler, K.S., Heath, A.C., Neale, M.C., Kessler, R.C. & Eaves, L.J. (1993). Alcoholism and major depression in women: A twin study of the causes of comorbidity. *Archives of General Psychiatry*, 50, 690 – 698.

Kendler, K.S., Neale, M.C., MacLean, C.J., Heath, A.C., Eaves, L.J. & Kessler, R.C. (1993a). Smoking and major depression: A causal analysis. *Archives of General Psychiatry*, 50, 36 – 43.

Kernberg, O.F. (1992). Psychopathic, apmaoid and depressive transferences. *International Journal of Psychoanalysis*, 73, 13 – 28.

Khantzian, E.J. (1987) A clinical perspective of the cause-consequence controversy in alcoholic and addictive suffering. *Journal of the American Academy of Psychoanalysis*, 15, 521 - 537.

Khantzian, E.J. & Treece, C. (1985). DSM-III Psychiatric Disorders of Narcotics Addicts. *Archives of General Psychiatry*, 42, 1067 - 1071.

Kosten, T.R., Rounsaville, B.J. & Kleber, H.D. (1987). A 2.5-year follow-up of cocaine use among treated opiate addicts; have our treatments helped? *Archives of General Psychiatry*, 44, 281 –284.

Kosten, T.R., Rounsaville, B.J. & Kleber, H.D. (1986). A 2.5-year follow-up of depression, life crises, and treatment effects on abstinence among opiod addicts. *Archives of General Psychiatry*, 43, 733 - 738.

Kranzler, H.R., Kadden, R.M., Babor, T.F., Tennen, H. & Rounsaville, B.J. (1996). Validity of the SCID in substance abuse patients. *Addiction*, 91, 859 – 868.

Leal, J., Ziedonis, D. & Kosten, T. (1994). Antisocial personality disorder as a prognostic factor for pharmacotherapy of cocaine dependence. *Drug and Alcohol Dependence*, 35, 31 – 35.

Liebeskind, A.S. (1991). Chemical dependency and the denial of the need for intimacy. In Smaldino, A. (Ed.), *Psychoanalytic Approaches to Addiction* (pp. 65 - 79). New York: Bruner/Mazel, Publishers.

Limbeek, J.V., Wouters, L., Kaplan, C., Geerlings, P.J. & Alem, V.V. (1992). Prevalence of psychopathology in drug addicted Dutch. *Journal of Substance Abuse Treatment*, 9, 43 – 52.

Marlatt, G.A. & George, W.H. (1984). Relapse prevention: introduction and overview of the model. *British Journal of Addiction*, 79, 261 – 273.

Marsh, D.T., Stile, S.A., Stoughton, N.L. & Trout-Landen. (1988). Psychopathology of opiate addiction: Comparative data from the MMPI and MCMI. *American Journal of Drug and Alcohol Abuse*, 14, 17 - 27.

Martin, C.W., Earleywine, M., Blackson, T.C., Vanyukov, M.M., Moss, H.B. & Tarter, R.E. (1994). Aggressivity, inattention, hyperactivity, impulsivity in boys at high and low risk for substance abuse. *Journal of Abnormal Child Psychology*, 22, 177 – 203.

McLellan, A.T. (1986). "Psychiatric severity" as a predictor of outcome from substance abuse treatments. In R. Meyer (Ed.), *Psychopathology and Addictive Disorders*. (pp. 97 – 139). New York: Guilford Press.

McLellan, A.T., Luborsky, L., Cacciola, J., Griffith, J., Evans, F., Barr, H.L., & O'Brien, C.P. (1985). New data from the Addiction Severity Index. Reliability and validity in three centers. *The Journal of Nervous and Mental Disease*, 173, 412 – 423.

McLellan, A.T., Luborsky, L., Woody, G.E. & O'Brien, C.P. (1980). An improved diagnostic evaluation instrument for substance abuse patients. The Addiction Severity Index. *The Journal of Nervous and Mental Disease*, 168, 26 – 33.

McLellan, A.T., Woody, G.E. & O'Brien, C.P. (1979). Development of psychiatric illness in drug abuse: Possible role of drug preference. *New England Journal of Medicine*. 310, 1310 – 1313.

Meloy, J.R. & Gacono, C.B. (1993). A borderline psychopath: "I was basically maladjusted..." *Journal of Personality Assessment*, 61, 358 - 373.

Messina, N.P., Wish, E.D. & Nemes, S. (1999). Therapeutic community treatment for substance abusers with antisocial personality disorder. *Journal of Substance Abuse Treatment*, 17, 121 – 128.

Miller, J.R. (1994). Substance abuse: The role of depression and trauma - A case report. *Journal of The American Academy of Psychoanalysis*, 22, 753 - 764.

Miller, W.R. & Brown, S.A. (1997). Why psychologists should treat alcohol and drug problems. *American Psychologist*, 12, 1269 –1279.

Mirin, S.M., Weiss, R.D. & Michael, J. (1988). Psychopathology in substance abusers: Diagnosis and treatment. *American Journal of Drug and Alcohol Abuse*, 14, 139 – 157.

Modlin, H.C. (1983). The antisocial personality. *Bulletin of the Menninger Clinic*, 47, 129 - 144.

Nace, E.P. & Davis, C.W. (1993). Treatment outcome in substance-abusing patients with a personality disorder. *American Journal on Addictions*, 2, 26 – 33.

National Consensus Development Panel on Effective Medical Treatment of Opiate Addiction. (1998). Effective medical treatment of opiate addiction – NIH Consensus Conference. *Journal of the American Medical Association*, 280, 1936 – 1943.

National Institute on Drug Abuse. (1997). Epidemiologic Trends in Drug Abuse, Volume I: Highlights and Executive Summary. U.S. Department of Health and Human Services, NIH Publication No. 98-4207.

New York State Office of Alcoholism and Substance Abuse Services. (1997). Selected characteristics of clients in ASA treatment. *Cds Extract*, 3/2/99.

Nunes, E.V., Weissman, M.M., Goldstein, R.B., McAvay, G., Seracini, A.M., Verdeli, H. & Wickramaratne, P.J. (1998). Psychopathology in children of parents with opiate dependence and/or major depression. *Journal of the American Academy of Child and Adolescent Psychiatry*, 37, 1142 – 1151.

Nunes, E., Goehl, L., Seracini, A. Deliyannides, D., Donovan, S., Koenig, T., Qutikin, F.M. & Williams, J. (1996). Evaluation of depression and panic disorder in methadone patients using a modification of the Structured Clinical Interview for DSM-III-R: test-retest reliability. *American Journal on Addictions*, 5, 241 – 248.

Nunes, E., Quitkin, F.M. & Seracini, A. (1990). Structured Clinical Interview for DSM-III-R-Substance Abuse Comorbidity. Biometrics Research Department, New York State Psychiatric Institute, New York.

Payte, J.T. & Zweben, J.E. (1998). Opiod maintenance therapies. In A.W. Graham & T.K. Schultz (Eds.), *Principles of Addiction Medicine, Second Edition*. (pp. 557-570). Washington, D.C.: American Society of Addiction Medicine.

Perry, J.C. & Cooper, S.H. (1985). Psychodynamics', symptoms and outcome in borderline and antisocial personality disorders and bipolar type II affective disorders. In T.H. McGlashan (Ed.) *The Borderline: Current Empirical Research*. (pp. 21 – 39). Washington, D.C.: American Psychiatric Press.

Prins, H. (1995). What price the concept of psychopathic disorder? *Medicine, Science and the Law*, 35, 307 – 315.

Rainer, J.D. (1979). Heredity and character disorders. *American Journal of Psychotherapy*, 33, 6 - 16.

Randolph, M.J. & Yates, W.R. (1993). Antisocial personality in alcohol- and drug-dependent individuals. *American Journal on Addictions*, 2, 9 – 17.

Regier, D.A., Farmer, M.E., Rae, D.S., Locke, B.Z., Keith, S.J., Judd, L.L. & Goodwin, F.K. (1990). Cormorbidity of mental disorders with alcohol and other drug abuse: Results from the Epidemiologic Catchment Area study. *Journal of the American Medical Association*, 264, 2511-2518.

Reich, J.H. & Vasile, R.G. (1993). Effect of personality disorders on the treatment outcome of Axis I conditions: An update. *Journal of Nervous and Mental Disease*, 181, 475 – 484.

Rounsaville, B.J., Kosten, & Kleber, H.D. (1986). Long-term changes in current psychiatric diagnoses of treated opiate addicts. *Comprehensive Psychiatry*, 27, 480 - 498.

Rounsaville, B.J., Kosten, T.R., Weissman, M.M. & Kleber, H.D. (1986). Prognostic significance of psychopathology in treated opiate addicts. *Archives of General Psychiatry*, 43, 739 - 745.

Rounsaville, B.J., Weissman, M.M., Kleber, H.D. & Wilber, C. Heterogeneity of psychiatric diagnosis in treated opiate addicts. (1982). *Archives of General Psychiatry*, 39, 161 - 166.

Rounsaville, B.J., Weissman, M.M., Crits-Christoph, G., Wilber, C. & Kleber, H. (1982). Diagnosis and symptoms of depression in opiate addicts: Course and relation to treatment outcome. *Archives of General Psychiatry*, 39, 151 - 156.

Rounsaville, B.J., Cacciola, J., Weissman, M.M. & Kleber, H.D. (1981). Diagnostic concordance in a follow-up study for opiate addicts. *Journal of Psychiatric Residency*, 3, 191 - 201.

Rousar, E., Brooner, R.K., Reigier, M.W. & Bigelow, G.E. (1994). Psychiatric distress in antisocial drug abusers: relation to other personality disorders. *Drug and Alcohol Dependence*, 34, 149 – 154.

Rutherford, M.J., Cacciola, J.S. & Alterman, A.I. (1999). Antisocial personality disorder and psychopathy in cocaine-dependent women. *American Journal of Psychiatry*, 156, 849 - 856.

Rutherford, M.J., Alterman, A.I., Cacciola, J.S., McKay, J.R. & Cook, T.G. (1996). Object relations and reality tesing in psychopathic and antisocial methadone patients. *Journal of Personality Disorders*, 10, 312 - 320.

Rutherford, M.J., Alterman, A.I., Cacciola, J.S. & Snider, E.C. (1995). Gender differences in diagnosing antisocial personality disorder in methadone patients. *American Journal of Psychiatry*, 152, 1309 - 1316.

Rutherford, M.J., Cacciola, J.S. & Alterman, A.I. (1994). Relationships of personality disorders with problem severity in methadone patients. *Drug and Alcohol Dependence*, 35, 69 - 76.

Schorr, L.B. (1988). *Within our Reach: Breaking the Cycle of Disadvantage.* New York: Anchor Press.

Segal, D.L., Hersen, M. & Van Hasselt,V.B. (1994). Reliability of the Structured Clinical Interview for DSM-III-R: an evaluative review. *Comprehensive Psychiatry*, 35, 316 – 327.

Smith, S.S. & Newman, J.P. (1990). Alcohol and drug abuse-dependence disorders in psychopathic and nonpsychopathic criminal offenders. *Journal of Abnormal Psychology*, 4, 430 - 439.

Spitzer, R.L., Williams, J.B.W., Gibbon, M. & First, M.B. (1992). The structured clinical interview for DSM-III-R (SCID) I: History, rationale, and description. *Archives of General Psychiatry*, 49, 624 – 629.

Standage, K. (1990). A classification of respondents to the CPI Socialization Scale: Associations with diagnosis and other clinical variables. *Personality and Individual Differences*, 4, 335 - 341.

Standage, K., Smith, D. & Norman, R. (1988). A classification of respondents to the CPI Socialization Scale: Associations with psychiatric diagnosis and implications for research. *Personality and Individual Differences*, 2, 231 - 236.

Stark, M.J. & Campbell, B.K. (1988). Personality, drug use, and early attrition from substance abuse treatment. *American Journal of Drug and Alcohol Abuse*, 14, 475 – 485.

Steer, R.A., Beck, A.T. & Shaw, B.F. (1985). Depressive symptoms differentiating between heroin addicts and alcoholics. *Drug and Alcohol Dependence*, 15, 145 - 150.

Stewart, J.B. (1997, November 24). Professional courtesy. *The New Yorker*, 73, 90 – 105.

Stone, M.H. (1993). Long-term outcome in personality disorders. *British Journal of Psychiatry*, 162, 299 – 313.

Stone, M.H. (1991). Aggression, rage and the "destructive instinct," reconsidered from a psychobiological point of view. *Journal of the American Academy of Psychoanalysis*, 19, 507 - 527.

Stone, M.H., Stone, D.K. & Hurt, S.W. (1987). Natural history of borderline patients treated by intensive hospitalization. *Psychiatric Clinics of North America*, 10, 185 - 206.

Strain, E.C. (1995). Commentary: Antisocial personality disorder, misbehavior, and drug abuse. *Journal of Nervous and Mental Disease*, 183, 162 – 165.

Strain, E.C., Brooner, R.K. & Bigelow, G.E. (1991). Clustering of multiple substance use and psychiatric diagnoses in opiate addicts. *Drug and Alcohol Dependence*, 27, 127 –134.

Swarns, R.L. (1999, January 16). Mayor relents on plan to end methadone use. *The New York Times*, A1, B3.

Swarns, R.L. (1998, July 21). Mayor wants to abolish use of methadone. *The New York Times*, B1, B4.

Tennent, G., Tennent, D., Prins, H. & Bedford, A. (1993). Is psychopathic disorder a treatable condition? *Medicine, Science and the Law*, 33, 63 – 66.

Thomas-Peter, B.A. (1992). The classification of psychopathy: A review of the Hare vs Blackburn debate. *Personality and Individual Differences*, 13, 337 - 342.

Tourian, K., Alterman, A., Metzger, D., Rutherford, M., Cacciola, J.S. & McKay, J.R. (1997). Validity of three measures of antisociality in predicting HIV risk behaviors in methadone-maintenance patients. *Drug and Alcohol Dependence*, 47, 99 – 107.

Vaillant, G.E. (1975). Sociopathy as a human process. *Archives of General Psychiatry*, 32, 178 - 183.

Walker, R. (1992). Substance abuse and B-cluster disorders I: understanding the dual diagnosis patient. *Journal of Psychoactive Drugs*, 24, 223 – 232.

Walker, R. (1992a). Substance abuse and B-cluster disorders II: treatment recommendations. *Journal of Psychoactive Drugs*, 24, 233 – 241.

Weiss, J.M.A., Davis, D., Hedlund, J.L. & Cho, D.W. (1983). The dysphoric psychopath: A comparison of 524 cases of antisocial personality disorder with matched controls. *Comprehensive Psychiatry*, 24, 355 - 369.

Weiss, R.D., Mirin, S.M. & Griffin, M.L. (1992). Commentary: Methodological consideration in the diagnosis of coexisting psychiatric disorders in substance abusers. *British Journal of Addiction*, 87, 179 – 187.

Whitters, A.C., Cadoret, R.J.& McCalley-Whitters, M.K. (1987). Further evidence for heterogeneity in antisocial alcoholics. *Comprehensive Psychiatry*, 28, 513 – 519.

Williams, J.B.W., Gibbon, M., First, M.B., Spitzer, R.L., Davies, M., Borus, J., Howes, M.J., Kane, J., Pope, H.G., Rounsaville, B., Wittchen, H.U. (1992). The structured clinical interview for DSM-III-R (SCID) II: Multisite test-retest reliability. *Archives of General Psychiatry*, 49, 630 – 636.

Williams, J.B.W. (1988). A structured interview guide for the Hamilton Depression Rating Scale. *Archives of General Psychiatry*, 45, 742 – 747.

Winick, C. (1992). Epidemiology of alcohol and drug abuse. In J.H. Lowinson, P. Ruiz, R. Millman & J. Langrod (Eds.), *Substance Abuse, A Comprehensive Textbook, Second Edition*. (pp. 15 – 29). Philadelphia: Williams and Wilkins.

Woody, G.E., McLellan, A.T., Luborsky, L & O'Brien, C.P. (1995). Psychotherapy in community methadone programs: A validation study. *American Journal of Psychiatry*, 152, 1302 - 1308.

Woody, G.E., McLellan, A.T., Luborsky, L & O'Brien, C.P. (1985). Sociopathy and psychotherapy outcome. *Archives of General Psychiatry*, 42, 1081 - 1086.

Woody, G.E., McLellan, A.T., Luborsky, L., O'Brien, C.P., Blaine, J., Fox, S., Herman, I. & Beck A.T. (1984). Severity of psychiatric symptoms as a predictor of benefits from psychotherapy. *American Journal of Psychiatry*, 141, 1172 - 1177.

Woody, G.E., McLellan, A.T., Luborsky, L & O'Brien, C.P. (1983). Psychotherapy for opiate addicts, does it help? *Archives of General Psychiatry*, 40, 639-645.

Woody, G.E., O'Brien, C.P., McLellan, A.T., Marcovici, M. & Evans, B.D. (1982). The use of antidepressants with methadone in depressed maintenance patients. *Annals of the New York Academy of Science*, 398, 120 - 127.

Wren, C.S. (1999, May 9). For heroin's new users, a long, hard fall. *The New York Times*, 29, 34

Wright, F. (1987). Men, shame and antisocial behavior: A psychodynamic perspective. *Group*, 11, 238 - 246.