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Antisocial personality disorder is associated with receipt of physical disability benefits in substance abuse treatment patients

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Abstract

Background—Opioid dependence is growing at an alarming rate in the United States, and opioid dependent patients have substantial medical, as well as psychiatric, conditions that impact their ability to work. This study evaluated the association between antisocial personality disorder (ASPD) and receipt of physical disability payments in methadone maintenance patients.

Methods—Using data from 115 drug and alcohol abusing methadone maintained patients participating in two clinical trials, baseline characteristics of individuals receiving (n = 22) and those not receiving (n = 93) physical disability benefits were compared, and a logistic regression evaluated unique predictors of disability status.

Results—Both an ASPD diagnosis and severity of medical problems were significant predictors of disability receipt, ps < .05. After controlling for other variables that differed between groups, patients with ASPD were more than five times likelier to receive physical disability benefits than patients without ASPD (odds ratio = 5.66; 95% confidence interval = 1.58 – 20.28).

Conclusions—These results demonstrate a role of ASPD in the receipt of disability benefits in substance abusers and suggest the need for greater understanding of the reasons for high rates of physical disability benefits in this population.

Keywords

Antisocial personality disorder; ASPD; physical disability; substance use; opioid dependence; methadone maintenance treatment; disability

1. INTRODUCTION

Since 2000, the prevalence of opioid dependence has almost tripled in the United States (Office of Applied Studies, 2002; Substance Abuse and Mental Health Services

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Contributors
Shannon Byrne conducted analyses and drafted the initial manuscript. Nancy M. Petry designed the study and edited the manuscript. Martin G. Cherniack reviewed and edited the manuscript. All authors contributed to and approved the final manuscript.

Conflict of Interest
None.

Administration (SAMHSA), 2011) and more opioid-dependent individuals are seeking treatment. Treatment admission rates for opioid dependence increased 271% between 1995 and 2005 (SAMHSA, 2010).

Opioid-dependent patients tend to be relatively young, with an average age of 39 years (Winstanley et al., 2011). Despite their age, opioid-dependent patients suffer from high rates of medical diseases, including musculoskeletal problems (Grey et al., 2011) and HIV (Rosenblum et al., 2003). Chronic pain is also a substantive concern (Rosenblum et al., 2003). These medical conditions may render this population, which is notoriously unemployed or underemployed, unable to work (Becker et al., 2008; Oviedo-Joekes et al., 2008).

Opioid-dependent patients also suffer from high rates of psychiatric problems, including depression and anxiety, as well as personality disorders. In particular, 38% to 65% of methadone patients have antisocial personality disorder (ASPD; Batki, Canfield et al., 2011; Brooner et al., 1997; Carpentier et al., 2009; Darke et al., 1998; Zlotnick et al., 2008). ASPD is characterized by a pervasive pattern of disregard for, and violation of, the rights of others. Patients with ASPD may demonstrate deceitfulness, criminality, lack of remorse, and a sense of entitlement (American Psychiatric Association, 2000). Individuals with ASPD also have been characterized by a tendency to manipulate others for their own gain and to malinger (Kucharski et al., 2006).

The Social Security Administration (SSA, 2011) reported that 4.5% of individuals between the ages of 18 and 64 were recipients of Social Security Disability Insurance (SSDI), and 2.5% of this age group received Supplemental Security Income (SSI), which is awarded for total disability and ineligibility for SSDI. Receipt of SSDI or SSI among the substance-abusing population had been criticized as a subsidy for illicit drug purchasing (Farrell, 1992; Satel, 1994), but in a sample of older methadone patients, benefit status did not predict illegal drug use (Rosen, 2004). Although SSI was specifically repealed for substance use diagnoses in 1997, it remains a source of income to substance-abusing patients who have been reclassified with other health issues (Watkins et al., 2001). Psychiatric disorders often play a role in physical disability determinations, being the second most common source of problems among SSDI beneficiaries (Estroff et al., 1997; MacDonald-Wilson et al., 2003). A better understanding of the role of ASPD in particular may be important considering its prevalence in opioid-dependent populations and its potential relationship to obtaining or maintaining physical disability or supplemental income benefits.

Individuals with ASPD appear to have more severe medical problems than those without ASPD (McKay et al., 2000), which may increase their likelihood of applying for SSDI or SSI benefits. In a community-based study, ASPD was associated with greater likelihood of liver and coronary heart disease, as well as other medical conditions, inpatient hospitalizations, injuries, and emergency room visits (Goldstein et al., 2008). A study of psychiatric patients also found higher rates of hospital utilization among those with ASPD than those without (Williams et al., 1998). Individuals with ASPD have co-morbid mood, psychotic, somatoform, and substance use disorders (Black et al., 2010; Lewis, 2011; Ullrich and Coid, 2009), as well as more severe drug and alcohol use histories. Greater adverse consequences from drinking (Holdcraft et al., 1998) and lower overall functioning (Mueser et al., 2012) have been reported in ASPD individuals compared to those without ASPD. These psychiatric, medical, and functional issues may limit the ability to maintain steady employment or increase the likelihood of receiving disability or supplemental income benefits.

Very little research exists on the association of ASPD and disability benefits. One study found that substance-dependent patients with ASPD were more likely to receive welfare support five years after initiating substance use treatment than their counterparts without ASPD (Fridell et al., 2006). Another study reported that ASPD was associated with increased odds of receiving public assistance (Vaughn et al., 2010). These studies suggest that patients with ASPD may be more likely to either seek or receive financial support from the government. However, we have been unable to identify studies that examined specifically the association between ASPD and physical disability benefits. This study investigated whether substance-abusing patients with ASPD were more likely than their counterparts without ASPD to receive benefits on the basis of physical disabilities.

2. METHOD

2.1 Participants

We analyzed baseline data from two clinical trials comparing the efficacy of psychosocial treatments for cocaine dependence in methadone-maintained patients (N=115; Petry et al., 2007; Petry and Martin, 2002). Participants were recruited from a methadone clinic in Hartford, CT. Inclusion criteria were similar across the trials and included stable methadone dose (no changes in the last 1–3 months), past-year diagnosis of cocaine dependence, and English-speaking. Participants were excluded if they had severe dementia or uncontrolled psychiatric disorders (psychosis, bipolar disorder, recent suicide attempts), or were in recovery from pathological gambling (because a treatment condition had some similarities to gambling, but see Petry and Alessi, 2010; Petry et al., 2006). Only five individuals were excluded for uncontrolled psychiatric disorders, and none for gambling problems or dementia; because screening for study inclusion criteria was done before assessment of physical disability status, disability status of excluded individuals was not determined. All participants provided written informed consent as approved by Institutional Review Boards, and the primary studies provide detailed descriptions of the treatments and procedures (Petry et al., 2007; Petry and Martin, 2002).

2.2 Evaluations

At study initiation, participants provided demographic information, and trained research assistants with bachelor's or master's degrees administered sections of the Structured Clinical Interview for the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* related to ASPD and substance use disorders (First et al., 1996). Participants were classified as having ASPD if they endorsed at least three of 15 conduct disorder criteria (before age 15) and at least three of seven ASPD criteria since age 18. Participants also completed the Addiction Severity Index (ASI; McLellan et al., 1985), which assesses psychosocial functioning in seven domains: alcohol use, drug use, medical, employment, legal, family/social, and psychiatric. Scores range from 0 to 1, with higher scores indicative of more severe problems in a domain. The ASI medical section is reliable and valid in assessing global severity of physical problems in substance abusers (Calsyn et al., 2004). It also determined medical disability status, with the item: "Do you receive a pension for a physical disability?" The item was generic in nature and did not distinguish the type of disability benefit or reason for disability status.

2.3 Data Analysis

Chi-square and t-tests examined differences in demographic and substance use variables among patients receiving and not receiving physical disability benefits. Variables that differed significantly between groups were entered in a stepwise logistic regression to evaluate potential unique contributions of ASPD diagnosis to receipt of physical disability benefits. The first step included age, ASI-Medical composite score, and marital status as

independent variables, and physical disability benefit status was the dependent variable. Other variables that differed between groups (e.g., years of drug use) were highly correlated with age and therefore not included in the model, but results consistent with those reported herein were obtained when they were included (data not shown; available from authors). ASPD diagnosis was added as an independent variable in the second step of the logistic regression. Age and ASI-Medical scores were included as continuous variables, and marital status and ASPD diagnosis were entered as categorical. Analyses were conducted on SPSS v 15, and $p < .05$ was considered significant.

3. RESULTS

Twenty-two of 115 (19.1%) cocaine-dependent methadone patients reported receiving physical disability benefits. Table 1 shows baseline characteristics of patients based on disability status. Patients receiving benefits were older than those who were not, although the average age in both groups was under 45 years, and only 4 individuals in the sample were over 55 years (data not shown). Those receiving benefits had more severe medical problems than those who were not, and they were more likely to be married/cohabitating or widowed. They also reported longer histories of drug use than those not receiving disability.

In the logistic regression, Step 1 predicted disability recipient status. Being married/cohabitating was significantly related to disability receipt, as were higher ASI-Medical scores. However, the goodness-of-fit was poor-- Hosmer and Lemeshow $\chi^2=17.80$, $p=0.01$. In Step 2, ASPD diagnosis status was added into the model (Table 2). Including ASPD diagnosis significantly improved the model's predictive accuracy, $\delta\chi^2(1)=8.656$, $p<.01$, and this final model was a good fit: Hosmer and Lemeshow $\chi^2=7.73$, $p=.46$ and predicted disability status with over 86% accuracy. Higher ASI-Medical composite scores remained a significant predictor of disability benefit status. After controlling for this and other variables that differed between groups, cocaine-dependent methadone patients with ASPD were over five and a half times more likely to receive physical disability benefits than their counterparts without ASPD.

4. DISCUSSION

In this sample of methadone-maintenance patients, 53.0% were diagnosed with ASPD, and 19.1% reported receiving a "pension for a physical disability." Because of complexities of SSA rules and practices, supplemental income payments were likely considered a pension. These rates of ASPD and of physical disability benefits are substantially higher than those observed in community samples, but consistent with the rates of this personality disorder and the rates of federal income supplementation in methadone-maintained patients (Batki et al., 2011; Brooner et al., 1997; Carpentier et al., 2009; Darke et al., 1998; SSA, 2011; Zlotnick et al., 2008). Receipt of a physical disability-related benefit was related to baseline characteristics in a manner consistent with the literature; individuals were more likely to receive a physical disability-related benefit if they were older or endorsed more medical problems on the ASI.

Even after controlling statistically for variables that differed between groups, a diagnosis of ASPD was significantly associated with receipt of physical disability benefits. To our knowledge, this is the first paper to demonstrate this relationship. There are, nonetheless, limitations that must be considered. First, disability status and ASPD symptoms were assessed via self-report, which may limit validity of the data. Secondly, the existing dataset could not account for factors that may be important in the relationship between ASPD and disability, such as the physical condition(s) that patients had and for which disability benefits were awarded, or work credits or employment histories that may have affected disability determinations. The two studies from which these data were derived (Petry et al.,

2007; Petry and Martin, 2002) were not designed to probe federal or private disability payments in detail so future exploration of this association is needed. Thirdly, we cannot make any assumptions about the directionality of the relationship between ASPD and disability status. The significant association between current disability receipt and conduct disorder prior to age 15 (Table 1) suggests, however, that the conduct disorder symptoms began long before the individuals qualified for disability benefits.

This association does not necessarily suggest a causal relationship. Rather, ASPD and disability receipt may share a common vulnerability, or these data may reflect that ASPD patients are simply more likely to have a legitimate physical disability. Previous research indicates that ASPD patients have lower overall functioning as well as greater adverse consequences stemming from their substance use (Holdcraft et al., 1998; Mueser et al., 2012).

Although patients with ASPD may have been more likely to be awarded physical disability benefits, we do not know the rates at which the ASPD and non-ASPD patients sought out disability benefits. It is possible that even higher percentages of methadone-maintenance patients would be qualified to receive disability benefits, but patients who endorsed symptoms of ASPD (which can be highly stigmatizing) may also be more likely to admit to physical disabilities, and push for services. Finally, this sample consisted entirely of polysubstance abusing methadone patients. The association between ASPD and disability receipt may not generalize to other patient populations or community samples. Nevertheless, these intriguing results call for further examination of the relationship between ASPD and receipt of physical disability benefits.

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Table 1

Baseline and demographic characteristics by physical disability status

Variable	Receiving physical disability payments (n = 22)	Not receiving physical disability payments (n = 93)	Statistic	*p*
Age in years	43.8 (8.1)	39.5 (7.3)	$t(113) = -2.41$	0.02
Years of education	10.5 (2.3)	11.4 (1.9)	$t(113) = 1.87$	0.07
Employment status, % (n)			$\chi^2(3) = 4.42$	0.25
Full time	4.5 (1)	16.1 (15)		
Part time	4.5 (1)	12.9 (12)		
Unemployed	91.0 (20)	70.0 (65)		
Controlled environment	0 (0)	1.0 (1)		
Annual income, median (IQR)[a]	$7626 ($5700)	$6000 ($5694)	$t(111) = -2.06$	0.04
Study, % (n)			$\chi^2(1) = 0.83$	0.36
Petry & Martin (2002)	27.3 (6)	37.6 (35)		
Petry et al. (2007)	72.7 (16)	62.4 (58)		
Male gender, % (n)	36.4 (8)	38.7 (36)	$\chi^2(1) = 0.04$	0.84
Race, % (n)			$\chi^2(3) = 2.63$	0.45
Caucasian	9.1 (2)	20.4 (19)		
African-American	45.5 (10)	41.9 (39)		
Hispanic	40.9 (9)	36.6 (34)		
Other	4.5 (1)	1.1 (1)		
Marital status, % (n)			$\chi^2(3) = 11.90$	0.01
Never married	45.5 (10)	63.4 (59)		
Married/Cohabitating	13.6 (3)	2.2 (2)		
Widowed	13.6 (3)	2.2 (2)		
Divorced/Separated	27.3 (6)	32.2 (30)		
Addiction Severity Index	Scores			
Medical	0.38 (0.36)	0.19 (0.31)	$t(113) = -2.52$	0.01
Employment	0.90 (0.16)	0.81 (0.26)	$t(113) = -1.47$	0.14
Alcohol	0.05 (0.11)	0.08 (0.16)	$t(113) = 0.82$	0.41
Drug	0.21 (0.11)	0.19 (0.13)	$t(113) = -0.57$	0.57
Legal	0.13 (0.20)	0.06 (0.13)	$t(113) = -1.73$	0.09
Family/Social	0.16 (0.18)	0.12 (0.20)	$t(113) = -0.85$	0.40
Psychiatric	0.22 (0.21)	0.18 (0.22)	$t(113) = -0.84$	0.41
Years of cocaine use	21.8 (10.6)	15.4 (9.2)	$t(113) = -2.87$	0.01
Years of heroin use	22.5 (12.3)	14.7 (8.1)	$t(113) = -2.84$	0.01
Lifetime months incarcerated	32.2 (45.0)	19.9 (37.0)	$t(113) = -1.35$	0.18
On probation/parole, % (n)	16.1 (15)	31.8 (7)	$\chi^2(1) = 2.83$	0.09
DSM-IV Conduct Disorder Diagnosis, % (n)	95.5 (21)	66.7 (62)	$\chi^2(1) = 7.34$	0.007
DSM-IV Antisocial Personality Disorder, % (n)	81.8 (18)	46.2 (43)	$\chi^2(1) = 9.04$	0.003

Values represent means (and standard deviations) unless otherwise indicated. DSM-IV= *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition*

[a] Income was log transformed prior to analyses.

Table 2

Predictors of physical disability payments in cocaine-dependent methadone patients.

Predictor	Beta	S.E. Beta	Wald χ^2	*p*	Odds Ratio	95% Confidence interval
Step 1						
Age	0.07	0.04	3.36	0.07		
Marital Status			7.89	0.05		
Married/Cohabitating	2.26	1.02	4.95	0.03	9.55	1.31 – 69.79
Widowed	1.81	1.14	2.53	0.11		
Divorced/Separated	−0.19	0.62	0.09	0.76		
ASI Medical composite score	1.55	0.74	4.42	0.04	4.73	1.11 – 20.11
Step 2						
Age	0.07	0.04	3.36	0.07		
Marital Status			6.76	0.08		
Married/Cohabitating	2.31	1.10	4.43			
Widowed	1.49	1.29	1.33			
Divorced/Separated	−0.34	0.65	0.28			
ASI Medical composite score	1.73	0.80	4.71	0.03	5.64	1.18 – 26.88
Antisocial Personality Disorder	1.73	0.65	7.08	0.01	5.66	1.58 – 20.28