Conduct Disorder and Antisocial Personality in Adult Primary Care Patients

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BACKGROUND. Conduct disorder has been linked to substance use disorders in clinical populations. This study examined the relationships of conduct disorder and antisocial personality (ASP) disorder to substance use, substance abuse problems, depression, and demographic factors in primary care settings.

METHODS. As part of a larger clinical trial, a survey of 1898 patients in the offices of 64 primary care physicians was conducted using a self-administered health habits questionnaire. Childhood conduct disorder and adult antisocial personality disorder were assessed using criteria from the *Diagnostic and Statistical Manual of Mental Disorders, Third Edition, Revised.*

RESULTS. Eight percent of men and 3.1% of women met criteria for a diagnosis of ASP disorder. The frequency of a history of childhood conduct disorders was higher, with 13.4% for men and 4% for women. Antisocial personality disorder was predicted by male sex, being unmarried (single, separated, divorced), lifetime history of depression, binge drinking, self-reported history of drug problems, current smoking, and younger age. The predictors of a history of child conduct disorder were similar to those of ASP.

CONCLUSIONS. Primary care physicians treat many patients who have personality disorders and other conditions such as alcohol problems and depression. These patients need to be identified because of the high potential for comorbidity and the barriers to treatment inherent in these disorders.

KEY WORDS. Child behavior disorders; antisocial personality disorder; substance abuse; physicians, family. *(J Fam Pract 1997; 54:151-158)*

Childhood conduct disorder refers to a disorder marked by a variety of behavior problems at home and in school that begin before the age of 15. If these problems continue into adulthood in the context of a failure to conform to social norms, the condition is likely to become an antisocial personality (ASP) disorder. Persons with the disorder tend to be aggressive and impulsive and often lack normal capacities for cooperation with authority figures.[1] These patients are perceived as difficult to treat medically because of compliance issues and potential concurrent problems with substance use disorders.

The extent of the disorder in the United States has been delineated in two national samples. The Epidemiologic Catchment Area (ECA) Study[1] interviewed a stratified sample from community and institutional populations aged 18 and older (N=20,000) in five US sites in the late 1970s to estimate rates of a number of mental health disorders. This study found that one or more psychiatric disorders had been experienced at some time in their lives by 32% of American adults, and 20% had an active disorder. The investigators reported an ASP disorder prevalence of 7.3% for men and 1.0% for women utilizing the Diagnostic Interview Schedule (DIS) based on the *Diagnostic and Statistical Manual of Mental Disorders, Third Edition* (DSM-III) criteria for ASP disorder. There was striking similarity among ethnic groups, but marked differences between the sexes, as had been noted in several previous studies. There was also a significant

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cohort effect, with ASP disorder rates decreasing with age.

The National Comorbidity Study (NCS)[2] was coordinated by a research team at the University of Michigan in 1990-91 and was the first study to administer a structured psychiatric interview (Composite International Diagnostic Interview) to a representative sample of adults aged 18 to 55 years in the United States. The study found the prevalence of ASP disorder to be 5.8% (SE=0.6) for men and 1.2% (SE=0.3) for women, with an overall rate of 3.5% (SE=0.3). These results were similar to those of the ECA study. Higher rates of ASP disorder were found for male subjects, younger adults, and those at lower income levels. There were no differences in ASP disorder rate by race or ethnicity. In addition, across diagnoses, 79% of subjects in this study had more than one psychiatric diagnosis, indicating the importance of addressing comorbidity in any population experiencing mental health problems.

Most of the studies examining correlates of ASP disorder and conduct disorder have focused on either psychiatric or alcoholism treatment samples. Rates of psychiatric comorbidity, and particularly ASP disorder, have been as high as 70% in patients being treated for alcoholism.[3] In a study of male veterans entering alcohol treatment, Shuckit (1985)[4] found that patients with a primary diagnosis of ASP disorder were less educated, younger, and more likely to have secondary affective episodes, suicide attempts, and psychiatric hospitalizations than were patients with a primary diagnosis of alcoholism. Depression, suicidal ideation, and suicidal attempts have been linked with ASP disorder in clinical samples.[5,6]

A number of studies have found poor clinical outcomes for substance abuse patients who have a comorbid diagnosis of conduct disorder or ASP disorder.[7,8] Other studies have found, however, that ASP disorder does not predict short-term treatment response.[9,10] In a study of medically ill alcoholics, Willenbring et al[11] found that medical inpatients with alcoholism who refused transfer to an alcohol treatment program were more likely to have antisocial characteristics and low compliance with medical appointments in general. These studies provide background on the disorder in clinical populations but do not address the extent of conduct disorder or ASP disorder in primary medical care settings and the question of whether compliance problems and poor treatment outcome can be dealt with in these settings.

Patients in primary care settings who meet criteria for ASP disorder may present with work, family, social, and alcohol or drug-related problems. These problems can present barriers to treatment in medical settings because of substandard compliance with appointments and treatment regimens as well as greater complexity of care associated with possible comorbid conditions. Both the potential increased cost of dealing with these patients in primary care settings and the need to effectively work with patients who may be less compliant and may have multiple social and medical problems mean that primary care physicians need to understand the correlates and predictors of this disorder to be better prepared to understand, work with, and refer patients who have personality disorders.

Because no studies have addressed the issues of conduct disorder and ASP disorder in primary care settings, this study is the first step in delineating the prevalence and correlates of these personality disorders. Factors of interest in this study as potential correlates of personality disorders include sex, age, race, education, marital status, drug use, alcohol use, at-risk drinking, binge drinking, depression, other health habits, and family history of mental and addictive disorders. This is the first time all these variables have been reported within the same study for a primary care population from a diverse sample of urban and rural areas. This study provides the groundwork for further research on associated medical problems, costs of primary care treatment, and treatment compliance over time in this at-risk population.

METHODS

The research sites were the practices of 64 primary care physicians located in 10 counties in southern Wisconsin. All the physicians were in community-based practice. Data were collected between April 1992 and April 1993. A self-administered health screening survey (HSS) was offered to all adult patients (aged 18 to 65 years) presenting to one of the primary care physicians' offices participating in Project TrEAT (Trial for Early Alcohol Treatment). The methodology and results of this trial are discussed elsewhere.[12]

The HSS is a masked screening instrument

designed to assess smoking, exercise, weight concerns, and alcohol use during the previous 3 months. The instrument was developed by Wallace and Haines (1988)[13] and modified by Fleming and Barry (1991)[14] for use in brief alcohol intervention trials to minimize the intervention effect of the alcohol use questions. A random sample of 10% of the respondents (n=1944) were also asked to complete an extended form (HSS-B), which asked additional questions regarding depression, conduct disorders, drug use and problems, and family history of other mental health or substance use problems. This report presents the findings on rates of ASP and conduct disorder and associated factors in this 10% subgroup.

The HSS-B was distributed to patients by clinic receptionists. Patients signed a consent form for the HSS-B and completed the survey in the waiting room before they saw their physicians. Surveys were not given to persons who were unable to complete the questionnaire because of severe illness or a physical disability. Women who were pregnant were not eligible until post partum. The rate of patient refusal varied by clinic for both the short and longer form of the HSS with a range of 5% to 30% and a weighted mean of 13% for both versions of the questionnaire. The most common reasons given for patient refusal were lack of time and feeling too ill to complete the questionnaire.

Demographic data included ethnicity, marital status, age, education, and occupation. Childhood conduct disorder and adult ASP disorder were assessed with the self-administered Diagnostic Interview Schedule-Revised (DIS-R) based on the *Diagnostic and Statistical Manual of Mental Disorders, Third Edition, Revised* (DSM-III-R) criteria. Conduct disorders and ASP disorders were scored using a checklist format from the DIS-R. DSM-III-R criteria are listed in Table 1. Since this study was conducted, DSM-IV criteria have been instituted. The presence of symptoms both before and after age 15 was queried. A probable conduct disorder was defined by a positive response on three or more problems out of 12 before age 15. An ASP disorder was considered present if persons responded in the affirmative to four or more problems out of 10 after the age of 15. As with the ECA study, highly sensitive questions were not asked; thus, this survey was likely to underestimate the actual frequency of these disorders.

Depression was ascertained with questions about a major affective disorder in the DIS-R, ie, persons who responded positively to both the probe question and four or more of the seven symptom groups were defined as "ever depressed in their lifetime." A more complete discussion of depression in primary care from Project TrEAT can be found in Rowe et al.[15]

Alcohol use was assessed by first asking patients whether they had consumed alcohol during the past 3 months. Those who responded yes were then asked more detailed questions about consumption: quantity and frequency of beer, wine, or liquor consumed per week and number of episodes of binge drinking (6 or more drinks per occasion) during the 3-month period. For each of the three categories of beverages, examples were cited and respondents were asked to mark the category that reflected "on average" the number of days per week the beverage was consumed and the number of drinks consumed in 1 day. Additional questions inquired about past problems with alcohol or drugs or both. The four CAGE[16] questions were also included in the HSS-B. Drug use questions asked about tranquilizers, sleeping pills, marijuana, stimulants, cocaine, narcotics, PCP, psychedelics, and inhalants. Family history questions asked about alcohol or drug and mental health problems in father, mother, brothers, sisters, daughters, and sons.[17]

Categorical data were initially analyzed using chi-square tests controlling for gender where appropriate. Forward stepwise multivariate logistic regression models ($P < .05$) were used to examine those factors found to be significantly associated with conduct disorder and ASP disorder in the bivariate analyses. The logistic model included only those respondents for whom a complete data set was available.

RESULTS

Demographics and Prevalence

There were 1944 HSS-B questionnaires completed in the sample. A comparison of this sample with the total TrEAT population (N = 19,151) found no differences by age, sex, race or ethnicity, education, alcohol or smoking use, or number of persons in household. The average age of the sample was 41 years (range, 18 to 85). Approximately 42% of the sample had a high school education or less, 33% had some college, and 19% had a college degree. The population described was 85% white, 3.4% African-

TABLE 1

Diagnostic Criteria for 301.70 Antisocial Personality Disorder

A. Current age at least 18.

B. Evidence of Conduct Disorder with onset before age 15, as indicated by a history of three or more of the following:

(1) was often truant
(2) ran away from home overnight at least twice while living in parental or parental surrogate home (or once without returning)
(3) often initiated physical fights
(4) used a weapon in more than one fight
(5) forced someone into sexual activity with him or her
(6) was physically cruel to animals
(7) was physically cruel to other people
(8) deliberately destroyed others' property (other than by fire-setting)
(9) deliberately engaged in fire-setting
(10) often lied (other than to avoid physical or sexual abuse)
(11) has stolen without confrontation of a victim on more than one occasion (including forgery)
(12) has stolen with confrontation of a victim (e.g., mugging, purse-snatching, extortion, armed robbery)

C. A pattern of irresponsible and antisocial behavior since the age of 15, as indicated by at least four 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):
  (a) significant unemployment for six months or more within five years when expected to work and work was available
  (b) repeated absences from work unexplained by illness in self or family
  (c) abandonment of several jobs without realistic plans for others
(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
(3) 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
(4) repeatedly 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
(5) fails to plan ahead, or is impulsive, as indicated by one or both of the following:
  (a) traveling from place to place without a prearranged 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
(6) has no regard for the truth, as indicated by repeated lying, use of aliases, or "conning" others for personal profit or pleasure
(7) is reckless regarding his or her own or others' personal safety, as indicated by driving while intoxicated, or recurrent speeding
(8) if a parent or guardian, lacks ability to function as a responsible parent, as indicated by one or more of the following:
  (a) malnutrition of child
  (b) child's illness resulting from lack of minimal hygiene
  (c) failure to obtain medical care for a seriously ill child
  (d) child's dependence on neighbors or nonresident relatives for food or shelter
  (e) failure to arrange for a caretaker for young child when parent is away from home
  (f) repeated squandering, on persona items, of money required for household necessities
(9) has never sustained a totally monogamous relationship for more than one year
(10) lacks remorse (feels justified in having hurt, mistreated, or stolen from another)

D. Occurrence of antisocial behavior not exclusively during the course of Schizophrenia or Manic Episodes.

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American, and 5.9% other, with 5.8% not reporting. There were nearly twice as many women as men (men, n=708; women, n=1217). Sixty-nine percent of the sample were married or living with a partner, 15% had never been married, and 11% were divorced, separated, or widowed (4% missing data).

Conduct Disorder and ASP Disorder by Demographic Variables. Men were more likely than women to report symptoms meeting criteria both for adult ASP disorder (8% and 3.1%, respectively, [χ^2=25.20; *df*=1; *P*=.001]) and childhood conduct disorder (13.4% and 4%, respectively [χ^2=41.90; *df*=1; *P*=.001]).

Student's *t* tests of age by ASP disorder were significant (*t*=5.98; *df*=105.3; *P*=.0001). Subjects with ASP disorder had a mean age of 34.6 years compared with a mean age of 41.3 years among those without a diagnosis of ASP disorder. Similarly, subjects with a history meeting the criteria for childhood conduct disorder were significantly younger than those without a conduct disorder (*t*=5.10; *df*=178.0; *P*=.0001; 36.3 vs 41.3 years).

There was no significant difference in a history of childhood conduct disorder by race or ethnicity for men (χ^2=0.55; *df*=2; *P*=.46). However, there was a significant difference in a history of childhood conduct disorder by race for women (χ^2=13.57; *df*=2; *P*=.001), with nonwhite women significantly more likely to meet criteria for childhood conduct disorder than white women. There were, however, no differences in ASP disorder by race or ethnicity for either men (χ^2=1.84; *df*=3; *P*=.18) or women (χ^2=.97; *df*=2; *P*=.32).

There was a significant association between marital status and both conduct disorder (χ^2=25.67; *df*=2; *P*=.001) and ASP disorder (χ^2=23.31; *df*=2;

TABLE 2

Antisocial Personality Disorder and History of Child Conduct Disorder, by Risk Factors as Self-Reported in Survey Questionnaire

	Antisocial Personality Disorder			Child Conduct Disorder		
Risk Factor	**% Positive (n=94)**	**% Negative (n=1809)**	**χ^2 P Value**	**% Positive (n=153)**	**% Negative (n=1753)**	**χ^2 P Value**
Total Sample	**4.9**	**95.1**		**8.0**	**92.0**	
Cigarettes						
Smoker	69.1	25.5	.00	58.8	24.9	.00
Alcohol						
Current drinker	73.4	64.7	.09	69.1	65.0	.31
Binge drinker (>5 at one time)	58.7	21.0	.00	44.4	21.1	.00
Self-reported alcohol problem	38.5	8.1	.00	30.9	7.8	.00
Drugs						
Taken drugs (5+ times)	78.6	18.4	.00	65.7	17.6	.00
Self-reported drug problem	39.4	6.2	.00	30.1	6.0	.00
Depression						
Lifetime history	52.7	29.9	.00	49.3	29.5	.00
Family background						
Family member with alcohol problem	70.3	49.4	.00	71.7	48.6	.00
Family member with mental health problem	42.0	29.5	.03	44.6	28.9	.00

P=.001). The rate of ASP disorder overall was almost three times as high among the never married as among the married (10% vs 3.5%), and a history of conduct disorder was twice as common (12% vs 5.7%). The pattern held for both men and women.

Conduct Disorder and ASP Disorder by Substance Use. The frequencies of conduct disorder and ASP disorder are listed in Table 2, by substance use (cigarettes, alcohol, and drugs) and by self-reported alcohol and drug problems as well as family history of alcohol and mental health problems. While 70.4% of the sample reported no illegal drug use, drugs of choice included marijuana (used by 19.0% of the sample), cocaine (6.0%), tranquilizers (4.3%), psychedelics (3.9%), narcotics (3.4%), sleeping pills (1.9%), and inhalants (1.1%; nonexclusive categories of drug use are reported).

Alcohol. Increased consumption of alcohol was significantly related to a history of a conduct disorder diagnosis (t=4.42; df=161.2; P=.0001) and ASP disorder (t=4.89; df=93.6; P=.0001). Furthermore, binge drinking during the past 3 months was more prevalent among those with ASP disorder (χ^2=70.66; df=1; P=.0001) or conduct disorder (χ^2=42.61; df=1; P=.0001) than among those with neither. Subjects with ASP disorder or conduct disorder were also more likely to report having ever had a drinking problem (ASP, χ^2=95.03; df=1; P=.0001; conduct disorder, χ^2=83.53; df=1; P=.0001). The results were similar for men and women.

Conduct Disorder and ASP Disorder and Family History. Subjects were asked whether a mental health problem, including depression, a nervous breakdown, or severe nervousness, had ever been diagnosed in their father, mother, siblings, or children. A family history of mental health problems was associated with both ASP disorder (χ^2=4.91; df=1; P=.027) and a history of conduct disorder (χ^2=24.62; df=1; P=.0001). A similar pattern was observed in the relationship to a reported alcohol problem in an immediate family member (ASP disorder, χ^2=12.25; df=1; P=.001; conduct disorder, χ^2=24.62; df=1; P=.0001).

TABLE 3

Logistic Regressions Predicting Antisocial Personality Disorder and History of Conduct Disorder by Substance Abuse and Demographic Variables

Predictor	Coef (β)	SE(β)	*P* Value	Exp(β)	95% CI
Antisocial personality*					
Male	1.5039	.3430	.00	4.50	2.30-8.81
Married	–.6499	.3402	.06	0.52	0.27-1.02†
Age	–.0356	.0158	.02	0.97	0.94-1.00‡
Depression	.7808	.3375	.02	2.18	1.13-4.23
CAGE positive	0.7274	.3613	.04	2.07	1.02-4.20
Drug problem	1.5157	.3545	.00	4.55	2.27-9.12
Smoker	1.3285	.3498	.00	3.78	1.90-7.49
Constant	–3.4356	.6649	.00		
Conduct disorder†					
Male	1.6120	.2637	.00	5.01	2.99-8.41
Married	–.7752	.2587	.00	.46	0.28-0.76
Age	–.0314	.0114	.01	.97	0.95-0.99
Depression	.5700	.2641	.03	1.77	1.05-2.97
Family alcohol	.6614	.2648	.01	1.94	1.15-3.26
Family mental	.5392	.2662	.04	1.71	1.02-2.89
Drug problem	1.1588	.3075	.00	3.19	1.74-5.82
Smoker	.9526	.2569	.00	2.59	1.57-4.29
Constant	–2.8292	.4970	.00		

*–2 Log likelihood=298.37; model χ^2 124.82; df=7; P=.0000.†Not significant. ‡+-2 Log likelihood=478.40; model χ^2 146.47; df=8; P=.0000.
Coef (β) denotes coefficient beta; SE (β), standard error beta; Exp (β), exponentiated beta.

Predictors of Conduct Disorder and ASP Disorder in Primary Care Patients. Potential predictor variables included in the logistic regression model for ASP disorder were age, smoking status, sex, marital status, race or ethnicity, education, lifetime depression, family alcohol problem, family mental health problems, binge drinking, CAGE score, and drug problems. The variables that entered the model at the .05 level and predicted a positive ASP disorder score included male sex, unmarried (single, separated, divorced), lifetime history of depression, binge drinker, self-reported history of drug problems, current smoker, and younger age. The predictors of a history of conduct disorder matched those of ASP disorder with the exception that binge drinking was not significant, whereas both family mental health and alcohol problems were significant. The exponentiated beta coefficients are reported in Table 3, with 95% confidence intervals.

DISCUSSION

The results of this study suggest that drug use and smoking are highly associated with conduct disorders and ASP disorders. Binge drinking was associated with an ASP disorder but not with a childhood conduct disorder. This is one of the first studies relating these disorders to at-risk drinkers rather than to patients in treatment for substance dependence.

The correlations found in this study between conduct disorder or ASP disorder and smoking, alcohol use, drug use, and depression raise complex issues. A number of recent studies[1,2,9] suggest that there is a substantial degree of comorbidity between these mental health disorders and substance use disorders, particularly in clinical populations. The association of personality disorders with at-risk drinking is of note. In the regression model, the association was limited to lifetime depression and ASP disorder only. This finding may be related to the interrelationships of conduct disorders and ASP disorders with alcohol problems.

The results of this study delineate a profile of patients in primary care settings who may have an ASP disorder or a history of childhood conduct disorder. Younger men who smoke, drink to excess or binge drink, suffer from depression, and have a history of problems with drugs are at particularly high risk for meeting ASP disorder criteria. Although ASP is considered a disorder affecting primarily men, over 3% of the women in this primary care sample met criteria for adult ASP disorder, comparable to national study populations. In addition, persons with a history of childhood conduct disorder reported family histories of both alcohol and mental health problems. It appears that both single marital status and younger age may be related to problems from ASP and conduct disorders.

The strengths of this study include a large sample size, recruitment of subjects from a large number of community-based primary care practices, a high response rate, and the use of DSM-III-R criteria. While Project TrEAT was not designed as a national prevalence study, the diversity of the physician sites and the consistency with the results of the ECA and comorbidity studies suggest that the findings may be generalizable to other primary care sites. Over 86% of the primary care patients who were given the HSS completed the questionnaire while they were waiting to see their physicians. The use of DSM-III-R criteria to classify subjects by their responses to questions contained in the DIS-R[18] allowed direct comparison with other surveys based on these criteria.

Study limitations include the use of a cross-sectional design and retrospective reports to assess the prevalence of childhood conduct disorder. While the survey data cannot provide a definitive diagnosis of conduct disorder or ASP disorder, the consistency with the large national studies suggests the validity of the levels of these detected personality disorders.

Primary care patients with comorbid conditions such as personality disorders, risky drinking patterns, and depression require assistance that is effective from both a clinical and a cost standpoint. Physicians and other health care providers can serve an important function in the identification, intervention, and appropriate referral of patients with these comorbid conditions.

Patients in alcohol or drug treatment settings have disproportionately high rates of ASP disorder and are among the most difficult to treat.[7,8] Because there have been no studies addressing ASP disorder in primary care settings, little has been known about the correlates and predictors of ASP disorder with concurrent substance abuse or depression. Future research needs to address associated medical prob-

lems and the cost of primary care treatment for patients with ASP disorder, with a particular emphasis on those with comorbid alcohol abuse and other mental health conditions. Quick, accurate identification of younger patients with ASP or conduct disorder by their primary care providers is critical if early intervention to prevent a proliferation of alcohol-related and mental health problems is to be implemented.

Early intervention strategies have not been developed specifically for this disorder because of the difficulty of intervening with long-standing personality characteristics. Brief interventions have been shown to be effective, however, for primary care patients with alcohol problems,[12,19] a portion of whom have conduct disorders and ASP disorders. Therefore, other brief early intervention approaches can be tested and could prove effective with this often difficult-to-treat population. Given the competitive health care delivery market, avoidance of long-term and costly sequelae is highly desirable.

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