



Antisocial traits in psychiatrically ill veterans without antisocial personality disorder: relationship to Axis I disorders and effects on functioning

James Reich*

Harvard Medical School, Cambridge, MA, USA

Received 18 June 1996; revised 4 November 1996; accepted 4 December 1996

Abstract

The prevalence of antisocial traits was investigated in a group of veterans who were in treatment at an out-patient psychiatric clinic and who did not meet diagnostic criteria for an antisocial personality disorder. Standardized DSM-III-R interviews were used to diagnose Axis I disorders and antisocial personality disorders and traits. Frequencies of antisocial traits were compared between patients and controls as well as between diagnostic subgroups in the clinical population. Odds ratios were used to assess the effect of antisocial traits on several standardized measures of functioning. There was no overall difference in the dimensional measure of antisocial traits between the clinical and normal groups. There were trends for the frequency of individual traits to vary by Axis I diagnosis. The amount of antisocial traits (measured dimensionally) negatively affected measures of functioning for the overall clinical population. Different specific antisocial traits were associated with trends towards poorer functioning in the alcohol, major depression and post-traumatic stress syndrome subgroups. It is recommended that future research in the area of antisocial traits pay careful attention to the possible negative effects on functioning of subthreshold antisocial traits and also to Axis I comorbidity. © 1997 Elsevier Science Ireland Ltd.

Keywords: Personality disorder; Alcohol abuse; Major depression; Post-traumatic stress disorder; Comorbidity; Diagnosis

* 2255 North Point St. 102, San Francisco, CA 94123, USA.

1. Introduction

The concept of antisocial personality has been approached from many different perspectives. In DSM-III-R (American Psychiatric Association, 1987), it is conceptualized as a syndrome with definite familial and probable genetic components (Robins, 1966; Crowe, 1974). Eysenck (1977) considered antisocial personality to have definite genetic components, while Hare (1968) focused on the concept of a biological deficit in the limbic system. Millon (1981) and many other dimensional theorists viewed sociopathy as a personality trait which exists to a greater or lesser extent throughout most of the population and which may be normally distributed. Although a complete review of the concept of antisocial personality is beyond the scope of this article, it appears that many theorists believe that antisocial traits that do not reach the threshold necessary to qualify for a formal diagnosis may, nonetheless, have negative effects on behavior and functioning (the dimensional concept of sociopathy). The term 'antisocial' is used in this article because it best describes the DSM measures used in this study. The behavioral/descriptive approach of DSM should be distinguished from the more theoretical orientation of researchers such as Hare (1968), whose concept posits an emotional deficit — lovelessness and lack of guilt — combined with an impulse disorder that has its roots in a deficit in the central nervous system.

This report focuses on veterans in an out-patient psychiatric clinic and examines the prevalence of modest levels of antisocial traits in this population and the effects of these traits, if present, on general functioning. The study's goals were: (a) to determine if veterans in a psychiatric out-patient clinic who do not meet criteria for antisocial personality disorder have more antisocial traits than screened control veterans; (b) to explore whether the presence of antisocial traits differs by Axis I diagnosis; and (c) to examine how the presence of antisocial traits affects functioning in this population.

2. Methods

Subjects for this study were drawn from a free-

standing Veterans Administration out-patient clinic in a city in the Northeast United States with a population of 300 000. The population was 100% male. Two subpopulations were sampled. The first was a random sample of psychiatric out-patients who did not meet criteria for antisocial personality disorder. The second group consisted of veterans who presented to the medical clinic for acute, minor medical problems and who had no history of psychiatric illness.

The information used in this report was gathered by direct interview. The evaluation consisted of an established measure of Axis I disorders, the Structured Clinical Interview for DSM-III-R (SCID) (Spitzer et al., 1988), and an established measure of DSM-III-R personality disorders, the Personality Disorder Examination, version 2 (PDE) (Loranger et al., 1987; Loranger, 1988). The computerized dimensional scoring on the PDE was used to determine overall antisocial dimensions; veterans scored positive on a given antisocial dimension if they had a score of '2'. The interview also included the Hollingshead scale of socioeconomic status, the Global Assessment Scale (GAS) (Spitzer et al., 1973; Endicott et al., 1976), the percentage of VA disability, and several dimensional self-report scales measuring various aspects of functioning. The self-report scales include a measure of work functioning (WORK), a combined measure of family and home functioning (FAMILY/HOME), and a combined measure of work and social functioning (WORK and SOCIAL). These self-report functioning scales are Likert scales, have face validity, and have been extensively used in pharmacological treatment trials.

Patients were approached, either by mail or in person at the time of a visit to the out-patient clinic, to take part in the study. Approximately 65% of eligible subjects participated in the interviews. To evaluate possible differences between respondents (those who were interviewed) and non-respondents (those who declined to participate in the research), the two groups were compared by chart review on the variables of diagnosis, age, and percentage of VA disability. (Chart diagnoses had to be used for comparison as there were no research diagnoses for the non-respondents.) No differences at the $P < 0.10$ level

between respondents and non-respondents were found on any of these variables. Thus, there did not appear to be any major demographic or diagnostic differences between the two groups that would bias extrapolation of findings to the entire population of veterans. There were no major differences in length and type of treatment among the subgroups.

The screened control group was identified by chart review of an out-patient medical clinic located on the same site as the psychiatric clinic. A random sample of those without significant medical problems were contacted and interviewed. Those who had an Axis I diagnosis were excluded from the screened control group.

Interviews were performed by bachelor's level research assistants who had undergone extensive training on all of the instruments involved. This training included reading, videotapes, didactic sessions and supervised practice interviews. Training materials and consultation were supplied by the Biometric Unit of the New York State Psychiatric Institute. Interviews were performed in person and not over the telephone. Research assistants were unaware of the purpose of the study and did not know in which group a given subject would be placed. The developer of the PDE participated in the training of some of the research assistants on the PDE.

All out-patients who met criteria for antisocial personality disorder were eliminated. The remaining group was compared to the screened controls and examined according to the presence of Axis I disorders (where the sample size was large enough to do so). Diagnoses used to distribute subjects into different subgroups were determined according to the SCID interview (described above) which used DSM-III-R criteria.

Patients from the clinical group were compared with the control group on mean number of antisocial traits and individual traits. Where there were enough subjects to do so, subsamples consisting of a specific diagnostic group from the patient group were compared with the rest of the clinical population. Both control and patient groups, as well as diagnostic subgroups within the patient group, were examined to determine the effect of antisocial traits on measures of functioning.

Statistical analyses were performed with SAS version 6.08 for personal computers (SAS Institute, 1993). Individual comparisons used Fisher's exact test for categorical variables and analysis of variance for continuous variables. Odds ratios were calculated using Proc Logist in the SAS program.

The use of multiple statistical tests increases the risk of finding significant differences on the basis of chance alone. Because 85 tests were performed, only those statistical values at or above 0.0005 were considered significant for the purposes of this report. Values between 0.02 and 0.0005 were considered trends and are reported for reader interest.

3. Results

There were 134 subjects in the clinical group and 28 subjects in the control group. All subjects were male. The two groups did not differ significantly in mean age: clinical group = 56.6 years (S.D. 12.8), control group = 55.5 years (S.D. 11.7). As would be expected, the control group had higher socioeconomic status (Hollingshead score = 4.5, S.D. = 0.9), control group (Hollingshead score = 3.6, S.D. = 1.2; $F_1 = 19.8$, $P = 0.0001$). Similarly, the mean GAS score in the control group (84.8, S.D. = 6.3) was in the direction of higher functioning than that in the clinical group (65.7, S.D. = 12.2; $F_1 = 67.6$, $P = 0.0001$).

There were no significant differences in mean dimensional antisocial traits as measured by the PDE between the clinical group (3.9, S.D. = 3.5) and the control group (4.7, S.D. = 3.0; $F_1 = 1.23$, $P = 0.27$). There were three trends toward differences between controls and patients when individual traits were examined. The clinical group more often scored positive on the trait 'is irritable or aggressive' (22.3% vs. 3.3%, Fisher's exact $P = 0.02$) while the control group had higher scores in two traits, 'lack of remorse' (23.8% vs. 3.5%, Fisher's exact $P = 0.001$) and also 'deliberately destroyed others' property' (13.3% vs. 2.9%, Fisher's exact $P = 0.02$) (see Table 1).

When the clinical group was broken down into its largest diagnostic categories, there were a few trends toward certain subgroups being different from the rest of the clinical population. Com-

Table 1
Comparison of individual antisocial traits in control and clinical groups (in percent^a)

Criteria	Control subjects n = 32	Clinical n = 140
Repeated absences from work unexplained by illness in self or family	0	4.3
Abandonment of several jobs without realistic plans for others	7.1	13.5
Significant unemployment of 6 months or more within 5 years, when expected to work	3.6	3.5
Has never sustained a totally monogamous relationship for more than 1 year	0	2.9
Fails to plan ahead or is impulsive	0	5.8
Lacks ability to function as a parent	0	0.9
Repeatedly fails to honor financial obligations	0	3.6
Is irritable or aggressive (repeated physical fights or assaults)	3.3	22.3*
Has no regard for truth, repeated lying	0	2.9
Is reckless regarding his or other people's safety	23.3	37.2
Fails to conform to social norms of lawful behavior	3.3	9.4
Lacks remorse	23.8	3.5**
Was often truant before age 15	13.3	7.2
Ran away overnight at least twice, before age 15	3.3	1.4
Often initiated physical fights, before age 15	13.3	10.9
Used a weapon in more than one fight, before age 15	3.3	0.7
Forced someone into sexual activity with him, before age 15	0	2.2
Was physically cruel to animals, before age 15	0	0.7
Was physically cruel to other people, before age 15	0	2.2
Deliberately destroyed others' property (except fires), before age 15	13.3	2.9*
Deliberately engaged in fire setting, before age 15	10.0	3.5
Often lied, before age 15	3.3	4.4
Stole without confronting victim more than once, before age 15	20.0	10.8
Stole with confrontation of victim, before age 15	0	0

^aNot all subjects answered all questions so the n for different criteria may vary slightly.

* Normals differ from clinical group by Fisher's exact test by $P < 0.02$.

** Normals differ from clinical group by Fisher's exact test by $P < 0.001$.

pared with the rest of the clinical group, the alcohol abuse subgroup ($n = 39$) scored higher on 'is reckless regarding his or other people's safety' ($P = 0.02$, Fisher's exact test) and 'fails to conform to social norms of lawful behavior' ($P = 0.02$, Fisher's exact test). The subgroup with panic disorder ($n = 16$) had higher scores on 'is reckless regarding his or other people's safety' ($P = 0.002$, Fisher's exact test).

When the associations between antisocial traits for the clinical groups measured as a dimension and functioning measures were examined by logistic regression, one significant finding and one trend emerged. Lower socioeconomic status was correlated with higher antisocial traits for the overall group ($n = 130$) (odds ratio = 1.2, $P = 0.0004$), and a higher percentage of VA disability

was correlated with higher antisocial traits for the alcoholic subgroup ($n = 28$). (Sample sizes vary slightly as not all measures were available for all subjects.)

Table 2 shows the relationship of specific antisocial traits and functioning variables in diagnostic subgroups large enough to permit a valid statistical test to be performed: alcohol dependence, major depression, and post-traumatic stress disorder. For the alcoholic group, three trends emerged: 'abandonment of several jobs' was related to socioeconomic status (odds ratio = 18.8) and to WORK (odds ratio = 20.0), while 'is reckless regarding his or other people's safety' was related to FAMILY/HOME (odds ratio = 4.7). For major depression, there were two trends: 'fails to conform to social norms of lawful behav-

ior' had an odds ratio of 20.0 for the WORK and SOCIAL dimensional measure and also for socioeconomic status (odds ratio of 6.6). The PTSD group had three trends: 'failure to plan ahead or is impulsive' was related to three different disability outcome measures (see Table 2).

4. Discussion

The major findings of this study are that when out-patients with antisocial personality disorder are excluded, there is no significant difference between mean number of antisocial traits in psychiatric patients and screened control subjects. Antisocial traits did negatively affect functioning. There were trends for the number and type of antisocial traits to vary within the clinical group depending on Axis I diagnosis. The specific functioning variables affected by antisocial traits varied by the specific subgroup as did the influence of some specific traits.

When differences in prevalences of specific antisocial traits between the control group and the clinical group are compared, it is interesting to look at the two criteria that were more prevalent in the control group. The first, 'deliberately destroyed others' property', is a criterion which oc-

curs before age 15 and only occurs in 13.3% of the control subjects. It appears that this is an aberrant behavior of some men before age 15 who later go on to show normal adjustment. The second, 'lacks remorse', is more interesting. It is a phenomenon that occurs in adults and is present in 23.8% of the control population. This could represent two things. Firstly, that those with this characteristic have faced difficult decisions and come to terms with them. Alternately, it could represent a sociopathic streak in this subpopulation that is not associated with other psychopathology and may or may not be associated with successful adjustment. The specific trait that is more prevalent in the overall clinical population, 'is irritable or aggressive', is clearly a highly dysfunctional trait with negative social consequences. As such, we would expect to find it in the less functional clinical group.

In the examination of frequencies of antisocial traits within the different clinical subgroups, it was not surprising to find 'is reckless regarding his or other people's safety' and 'fails to conform to social norms of lawful behavior' more common in the alcohol group. It is likely that the frequent use of a disinhibiting drug such as alcohol permits these particular traits to flourish. It is less obvious

Table 2
Relationship between specific antisocial traits and functioning measures in subpopulations where there was a large enough sample size to analyze^{a,b}

Predictor variable	Functioning variable	Sample size	Odds ratio	P value
A. Alcohol				
Abandonment of several jobs without realistic plans for others	SES	36	18.8	0.01
Abandonment of several jobs without realistic plans for others	WORK	36	20.0	0.01
Is reckless regarding his or other people's safety	FAMILY/HOME	36	4.7	0.01
B. Major depression				
Fails to conform to social norms of lawful behavior	SES	55	6.6	0.01
Fails to conform to social norms of lawful behavior	WORK and SOCIAL	57	20.0	0.001
C. Post-traumatic stress syndrome				
Fails to plan ahead or is impulsive	VA disability	43	13.0	0.006
Fails to plan ahead or is impulsive	FAMILY/HOME	47	23.3	0.008
Fails to plan ahead or is impulsive	WORK and SOCIAL	47	16.1	0.001

^aAll odds ratios are arranged in such away that the higher odds ratio indicates poorer performance on the functioning scale.

^bNot all measures were available on all subjects, so *n* may vary slightly from analysis.

why the panic disorder subgroup should be linked to 'is reckless regarding his or other people's safety'.

The dimensional measure of antisocial traits correlated significantly with lower socioeconomic status for the overall clinical population, with similar trends in the alcohol and major depression subgroups. Interestingly, the specific criteria most related to trends for disability seem largely to be associated with specific subgroup diagnoses. For the alcohol group, the criterion appears to be 'abandonment of several jobs without realistic plans for others'; for major depression, 'fails to conform to social norms of lawful behavior'; and for post-traumatic stress disorder, 'fails to plan ahead or is impulsive'. Perhaps these specific deficits should be regularly addressed in psychiatric rehabilitation plans of these populations. Such a targeted approach might improve the overall outcome of some patients.

As in any other report, there are strengths and limitations to this work. The strengths include a large sample size, standardized interview measurement techniques, and a good subject response rate. Limitations include the cross-sectional design, the older age of the sample (perhaps causing some behaviors that were stronger at a younger age to diminish), and the fact that findings can only be safely generalized to similar groups (not the general public or all clinical situations). Although antisocial traits were measured, it is possible that we were tapping into some other dimension that was colored by the specific Axis I disorders with which it was associated.

Clearly, this research needs to be replicated on younger populations in different clinical settings. Future research should be carried out in samples large enough to contain adequate numbers of patients in diagnostic subgroups to permit comparisons between Axis I disorders. Although it appears to be a factor from this report, the extent to which antisocial traits below the threshold for antisocial disorder affect functioning is unclear; however, given the prevalence of antisocial behav-

ior in our society, it is a research area that merits attention.

Acknowledgements

An earlier version of this report was presented at the Annual Meeting of the American Psychiatric Association (APA) in Miami, FL, May 1995. The author thanks Drs. Armand Loranger and John Oldham for the helpful comments they made in discussing this report at the APA Annual Meeting.

References

- American Psychiatric Association, 1987. *DSM-III-R: Diagnostic and Statistical Manual of Mental Disorders*, 3rd ed., revised. American Psychiatric Press, Washington, DC.
- Crowe, R., 1974. An adoption study of antisocial personality. *Archives of General Psychiatry* 31, 785-791.
- Endicott, J., Spitzer, R.L., Fleiss, J.L., Gibbon, M., 1976. The Global Assessment Scale: a procedure for measuring overall severity of psychiatric disturbance. *Archives of General Psychiatry* 33, 766-771.
- Eysenck, H.J., 1977. *Crime and Personality*, 3rd ed. Routledge and Kegan Paul, London.
- Hare, R.D., 1968. Psychopathy, autonomic functioning, and the orienting response. *Journal of Abnormal Psychology (Monograph supplement)* 73, 1-24.
- Loranger, A.W., 1988. *Personality Disorder Examination (PDE) Manual*. DV Communications, New York.
- Loranger, A.W., Susman, V.L., Oldham, J.M., Russakoff, L.M., 1987. The Personality Disorder Examination: a preliminary report. *Journal of Personality Disorders* 1, 1-147.
- Millon, T., 1981. *Disorders of Personality*. John Wiley, New York, pp. 181-215.
- Robins, L., 1966. *Deviant Children Grown Up: A Sociological and Psychiatric Study of Sociopathic Personality*. Williams and Wilkins, Baltimore.
- SAS Institute, 1993. *SAS For Personal Computers, Version 6.08*. SAS Institute, Cary, NC.
- Spitzer, R.L., Gibbon, M., Endicott, J., 1973. The Global Assessment Scale (GAS). Biometrics Research, New York State Department of Mental Hygiene, New York State Psychiatric Institute, New York.
- Spitzer, R.L., Williams, J.B., Gibbon, M., First, M.B., 1988. *Structured Clinical Interview for DSM-III-R: Patient Version (SCID-P)*. Biometrics Research Department, New York State Psychiatric Institute, New York.