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A Comparison of Adults with Antisocial Personality Traits with and without Childhood Conduct Disorder

MARIANNA PERDIKOURI, MSc

Nottinghamshire Healthcare NHS Trust, Nottingham, UK

GILLIAN RATHBONE, MRCPsych

Leicestershire Partnership NHS Trust, Leicester, UK

NICK HUBAND, PhD

Nottinghamshire Healthcare NHS Trust, Nottingham, UK

CONOR DUGGAN, FRCPsych

Division of Forensic Mental Health, University of Nottingham, Nottingham, UK

Background. *Antisocial personality disorder (ASPD) in DSM-IV is unique among personality disorder diagnoses in requiring the individual to satisfy a number of childhood criteria in addition to relevant traits exhibited in adulthood. We examined the validity of this childhood requirement.*
Methods. *Personality disordered individuals assessed using the International Personality Disorder Examination and exhibiting a sufficient number of adult antisocial traits to meet criterion A of DSM-IV were subdivided into those who exhibited antisocial traits in both adulthood and childhood and those who had such traits in adulthood only. The two groups were then compared on a number of historical, clinical, and self-report measures.*
Results. *Thirty individuals meeting both childhood and adult criteria (ASPD) were compared with 39 meeting adult antisocial criteria only (ASS). Few differences were found between the two groups on the measures examined, although those in the ASPD group appeared more severe and had higher anger scores on the STAXI-2 psychometric test.*
Conclusions. *This failure to find clinically important differences between the two groups is in agreement with previous reports and needs to be taken into account in future revisions of ASPD in DSM.*

INTRODUCTION

As there is a significant overlap between antisocial traits and criminal behavior, it is especially important that the diagnosis of antisocial personality disorder (ASPD) has an established and agreed validity. Unfortunately, there are two major criticisms of the current criteria for ASPD as specified by DSM (1). The first of these is that the criteria have a disproportionate focus on behaviors rather than on personality traits (2,3,4). The second is the requirement, unique among DSM personality disorder criteria, that the individual has to exhibit abnormalities not only in adulthood as with other personality disorders but also in childhood. Whether or not such childhood traits ought to be included as a necessary inclusion criterion is the focus of this study.

The background to the inclusion of these childhood criteria for ASPD was heavily influenced by Robins (5) retrospective study into the antecedents of adult antisocial behavior which led her to conclude that "antisocial personality rarely or never arose de novo in adulthood." Consequently, ASPD as defined by DSM included childhood criteria as a necessary condition. However, those who have examined this empirically have identified the following problems.

First, there is disagreement in the findings from the few empirical studies that have examined whether the presence of childhood characteristics influences either the aetiology or clinical presentation of ASPD. For instance, the genetic studies of DiLalla and Gottesman (6), Lyons et al. (7), and Langbehn

Address correspondence to Marianna Perdikouri, Humber Mental Health NHS Trust, College House, Willerby Hill, Beverly Road, Willerby, HU 10 6ED, UK. E-mail: mperdikouri@hotmail.com

and Cadoret (8) all suggested that genetic factors were more important in those with an early onset of antisocial behavior that persists into adulthood. However, Black and Braun (9) were unable to distinguish patients with ASPD (i.e., having both childhood and adult criteria) from those with Antisocial Syndrome (ASS) (i.e., meeting the adult criteria only) on socio-demographic data, medical history and psychiatric symptoms from a review of their files. They concluded that the ASS group was essentially the same disorder as ASPD, albeit in a less severe form. Perhaps more importantly from a clinical perspective, they identified a number of adults with significant antisocial behavior who, nonetheless, could not be classified as ASPD as they did not meet the childhood criteria. Black and Braun (9) concluded that the nosological status of these individuals was unsatisfactory so that a large group were "… left in diagnostic limbo."

Second, there is the question as to whether childhood criteria such as conduct disorder (CD) can be accurately assessed retrospectively. Rueter et al. (10) examined the accuracy of recalled versus contemporaneous diagnosis of conduct disorder in childhood prospectively in two large cohorts and showed that the use of a recalled CD diagnosis had neither acceptable sensitivity nor specificity for CD in childhood.

Third, there is concern that the number of CD criteria required for a diagnosis of ASPD may be gender sensitive with fewer criteria being required for women. For instance, Dowson et al. (11) assessed 56 non-psychotic psychiatric inpatients for DSM-IIIR personality disorders and found a weaker association between adult antisocial behavior (measured by adult ASPD criteria) and childhood conduct disorder in women. Robins and Price (12) confirmed this finding and suggested that meeting the adult behavior criteria for ASPD was best predicted by cut-points of 2+ childhood conduct problems for males and 1+ for females.

As various investigations have identified that a substantial proportion of those with antisocial behavior have an onset of such behavior in adulthood (9,10) it is important to examine the nosological validity of the current DSM ASPD criteria that excludes them. Robins and Guze (13) suggested that the following criteria be used to validate psychiatric disorders: clinical correlates, family history, treatment response, laboratory studies and course and outcome. They proposed that the validity of a diagnosis does not stem from any one study but from consistent data across a range of areas. In this spirit, we sought to replicate the findings from Black and Braun's earlier study (9) but with a methodology that addressed some of the limitations of their pioneering investigation.

METHODS

The sample examined in the current study was composed of volunteers in a clinical trial designed to explore the efficacy of a time-limited group-based intervention (14) for individuals with personality disorder. All participants resided in the community in

the East Midlands region of England and were recruited as follows. Local services were first asked to identify people who might wish to volunteer to participate and who were thought likely to meet the trial's inclusion criteria (at least one personality disorder diagnosed using DSM-IV; a level of literacy and cognitive functioning sufficient to allow engagement in the type of intervention being investigated; age between 18 and 65 years; willing to be assigned to treatment or to waiting-list control). Exclusion criteria were the presence of functional psychosis, and organic disability sufficient to impair understanding of purpose of the study, engagement in the assessment interview or completion of psychometric instruments.

Each of the 255 volunteers who attended for assessment was examined using the interview version of the WHO International Personality Disorder Examination (IPDE) (15). Each examination was carried out by one of the trial's six assessors who were all experienced with working with personality disorder and trained in administering the instrument. Inter-rater reliability was checked by one of the authors observing a small number of assessments at random and independently scoring volunteers' responses to each question.

Of the 241 volunteers who fulfilled the DSM-IV criteria for at least one personality disorder, 69 met three or more of the adult criteria for ASPD. We divided these into two groups: those who met the full criteria for ASPD, and those who did not qualify for a diagnosis of ASPD through failing to meet the criteria for childhood conduct disorder (CD). The two groups were then compared using information acquired during the assessment interview and historical data obtained by reviewing each participant's case notes and medical records. The study received approval from the relevant medical research ethical committee and all volunteers provided written consent for their information to be accessed.

Comparisons were also made on forensic data derived from the Offenders' Index (OI) (16) which is maintained by the English Home Office (Research, Development, & Statistics Department) to provide an official record of all individuals convicted of a standard list offence in England and Wales since 1963. Standard list offences include all indictable offences and a few non-indictable offences; they are generally the more serious types of offences.

Additional comparisons were made using scores from a set of psychometric measures which were available from those volunteers who went on to become participants in the trial. These measures were completed after assessment but before commencing any problem-solving therapy and comprised the Social Functioning Questionnaire (SFQ) (17), the Social Problem-Solving Inventory-Revised (SPSI-R)(18), the State-Trait Anger Expression Inventory-2 (STAXI-2) (19), the Barratt Impulsiveness Scale (BIS) (20), the Dissociative Experiences Scale (DES) (21) and the Experience of Shame Scale (ESS) (22).

Statistical analysis was carried out using SPSS software for Windows (version 12.0). All results were taken as significant at the level of $p < 0.05$ employing two-tailed tests unless specified otherwise. Categorical comparisons were made using

chi-square tests with Yate's correction. Where appropriate, specific dimensional comparisons were made using independent samples t-tests after applying Levene's test for homogeneity of variance.

RESULTS

Two groups were selected for comparison. The first comprised 30 individuals who met the criteria for ASPD and, by definition, also met the criteria for CD in childhood. We term this the 'ASPD group.' The second comprised 39 individuals who did not qualify for a diagnosis of ASPD through failing to meet the criteria for childhood CD (i.e., less than 3 criteria were met in Section C of the DSM-IV rubric). We term this the antisocial syndrome group ('ASS group'), noting that this second group is defined in terms of antisocial traits rather than criminal convictions and so differs from the 'late-bloomers' described by DiLalla and Gottesman (6).

Social and Demographic Data

The two groups were not significantly different in terms of gender, age, marital status, or occupation (Table 1).

Reliability of IPDE Diagnosis

Interviewer-observer agreement was derived from 16 double-rated interviews. There was no disagreement in the assignment of research diagnosis of personality disorder in any of the cases jointly assessed in this way. Inter-rater reliability at the item level was calculated on the basis on 3×3 tables; Cohen's kappa ranged from 0.69 to 0.88 (mean 0.83; sd 0.05).

Table 1   Social and Demographic Data

	ASPD Group n = 30	ASS Group n = 39
Gender [No. (%)]		
Male	20 (67)	25 (64)
Age [mean yr (SD)]		
Overall	35.2 (8.0)	37.6 (8.2)
Males	35.2 (8.5)	37.6 (7.7)
Females	35.2 (7.2)	37.8 (9.3)
Marital status [No. (%)]		
Single	8 (27)	15 (39)
Married	5 (17)	6 (15)
Divorced, widowed, separated	4 (13)	10 (26)
Living with partner	5 (17)	2 (5)
Not known	8 (27)	6 (15)
Occupation [No. (%)]		
Employed	0	6 (15)
Unemployed	20 (67)	25 (64)
Not known	10 (33)	8 (21)

Personality Disorder Diagnosis

DSM-IV records ten categories of personality disorder other than antisocial PD. The distribution of these categories was similar for both groups (see Table 2), although a significantly greater proportion of the ASPD group (50%) had 3 or more PDs compared to the ASS group (10%). The two groups were not significantly different in terms of the numbers having PDs in 1, 2, and 3 clusters.

Table 3 lists the DSM adult antisocial criteria met by members of the two groups. Significantly fewer of the ASS group met two of the adult criteria (*Repeated acts that are grounds for arrest*; *Irritability and aggressiveness*), although there were no significant differences in either group in terms of gender.

Childhood criteria are not tabulated here. The four childhood criteria most commonly met were the same for both groups (*Often stayed out at night; Ran away from home overnight at least twice; Often initiated physical fights; Often truant*). A significant difference between genders emerged for one

Table 2   Personality Disorder Diagnosis

	ASPD Group	ASS Group
Personality disorder comorbidity [No. (%)]		
Having 2 PDs	10 (33)	12 (31)
Having 3 or more PDs	15 (50)[a]	4 (10)[a]
with Paranoid PD	11 (37)	7 (18)
with Schizoid PD	0	1 (3)
with Schizotypal PD	1 (3)	0
with Borderline PD	21 (70)	19 (49)
with Histrionic PD	3 (10)	1 (3)
with Narcissistic PD	2 (7)	1 (3)
with Avoidant PD	7 (23)	13 (33)
with Dependent PD	0	1 (3)
with Obsessive-compulsive PD	2 (7)	10 (26)
with PD NOS	n/a	9 (23)
Having PD in 1 cluster	16 (53)	16 (41)
Having PD in 2 clusters	9 (30)	10 (26)
Having PD in 3 clusters	5 (17)	4 (10)

[a]$\chi^2 = 13.42$, df = 1, p = .0007, Yate's corrected.

Table 3   Numbers Meeting DSM-IV Adult Criteria for ASPD

	ASPD Group	ASS Group
Repeated acts that are grounds for arrest	29 (97)[a]	28 (72)[a]
Irritability and aggressiveness	28 (93)[b]	19 (49)[b]
Reckless disregard for safety of self or others	22 (73)	34 (87)
Employment or financial irresponsibility	19 (63)	21 (54)
Lack of remorse	13 (43)	14 (36)
Repeated lying, use of aliases or conning	12 (40)	13 (33)
Impulsivity or failure to plan ahead	8 (27)	11 (28)

[a]$\chi^2 = 5.7$, df = 1, p = .017, Yate's corrected.
[b]$\chi^2 = 13.5$, df = 1, p < .001, Yate's corrected.

childhood criterion (*Often bullied, threatened, intimidated*) which was met by 55% (11/20) males but only 10% (1/10) females in the ASPD group (χ^2 = 3.91, df = 1, p = .048).

Self-reported Psychometric Data

Forty-seven volunteers proceeded from the assessment stage to participating in the trial and so completed psychometric measures after their assessment but before commencing any therapy. This sub-set comprised 60% (18/30) of the ASPD group and 74% (29/39) of the ASS group. As a check on whether this sub-sample was representative, we compared it with the set of 22 individuals who did not proceed beyond the assessment stage and so did not complete any psychometric measures. Comparisons were made on age, gender, number of PD diagnoses, number of lifetime hospitalizations and forensic history (data not shown). No significant difference was found for any of these variables between those who completed psychometric measures compared to those who did not.

The ASPD and ASS groups were not significantly different in self-assessed social functioning, social problem-solving ability, impulsiveness, shame or dissociative experience (see Table 4). The only measure that did discriminate between the two groups was the STAXI-2. For the ASPD group, trait anger and outward anger expression were significantly greater and control of outward anger was significantly less when compared to the ASS group.

Within group differences between anger sub-scale scores were explored using repeated-measures t-tests. AX-I scale scores (inward anger expression) were significantly higher than AX-O scores (outward anger expression) for the ASS group but were similar for the antisocial personality disorder group. AC-I scores (inward anger control) were significantly lower than AX-O scale scores (outward anger expression) for the antisocial personality disorder group but similar for the ASS group.

Comparison on Other Characteristics

The two groups were remarkably similar and showed no significant difference in substance misuse, contacts with mental health staff or hospitalization history (see Table 5). The only significant differences that emerged were in A&E attendance within the previous six months; those in the ASPD group were more likely to have attended A&E for any reason, including self-harm.

Based on information recorded in the notes, a higher proportion of the ASPD group had been violent to partners or family members, to others and to property although these differences did not reach statistical significance. No significant differences were recorded in terms of offending history, although 70% of the ASPD group had at least one conviction recorded on the Offenders Index compared to 54% of the ASS group.

DISCUSSION

This investigation examined the validity of the ASPD/ASS distinction by comparing on a number of independent measures a sample of individuals who were seeking treatment in the community and who satisfied the criteria of one or other of these two groups. In general there were few differences between the two groups although those with ASPD were more severely affected. This was evident from (a) a significantly disproportionate number meeting some of the criteria for ASPD behavior in DSM-IV (Table 3), (b) more meeting criteria for 3 or more personality disorders, and (c) having higher anger scores on the STAXI psychometric.

The sample studied here contained more individuals with ASS (n = 39) than with ASPD (n = 30), suggesting that ASS may be much more common than previously considered and in contrast to other studies, reviewed by Loeber et al. (23), which

Table 4 Self-reported Psychometric Data

	ASPD Group [Mean (SD)]	ASS Group [Mean (SD)]	Statistic
Social functioning (SFQ)	13.9 (4.6)	14.2 (5.0)	n.s.
Social problem-solving (SPSI-R)	7.1 (2.6)	7.7 (3.6)	n.s.
Impulsiveness (BIS)	83.2 (10.6)	82.2 (13.7)	n.s.
Experience of shame (ESS)	65.9 (18.9)	67.8 (20.1)	n.s.
Dissociative experiences (DES)	35.1 (20.6)	27.6 (17.5)	n.s.
Trait anger (STAXI-2)[a]	29.1 (6.5)	24.4 (7.3)	t = 2.22, df = 43, p = .032
Anger expression (STAXI-2)[a]			
Anger expression out (AX-O)	22.2 (4.3)[c]	17.8 (5.8)[b]	t = 2.73, df = 43, p = .009
Anger expression in (AX-I)	21.3 (3.8)	21.0 (4.4)[b]	n.s
Anger control out (AC-O)	15.8 (3.3)	18.8 (4.4)	t = 2.20, df = 42.1, p = .034
Anger control in (AC-I)	17.2 (5.7)[c]	17.0 (6.3)	n.s.
Anger expression index (AX)	58.4 (10.0)	51.0 (15.2)	n.s.

[a]18 individuals in the ASPD group and 27 in the ASS group completed the STAXI-2.

[b]t = 2.31, df = 26, p = .029.

[c]t = 2.94, df = 17, p = .009.

Table 5 Other Characteristics

	ASPD Group	ASS Group
Notes[a] record information suggesting [No. (%)]		
Alcohol misuse	12 (40)	22 (56)
Substance/drug misuse	13 (43)	14 (36)
Self-harm[b], ever	22 (73)	27 (69)
Head injury	1 (3)	2 (5)
Domicile stability		
Address changes in past 5 yrs [mean SD]	1.00 (1.2)	1.27 (1.5)
Notes[a] record psychiatric hospitalisation		
Admission, ever [No. (%)]	11 (37)	20 (51)
Admissions [mean (SD)]	2.5 (3.6)	3.2 (4.6)
Hospital days [mean (SD)]	54.1 (116)	40.5 (63)
Compulsory admission, ever [No. (%)]	2 (7)	2 (5)
Use of services[c] in previous 6 months [No. (%)]		
A&E attendance, any reason[e]	12 (40)	5 (13)
A&E attendance for self-harm[f]	6 (20)	1 (3)
Psychiatric hospital admission, any	2 (7)	5 (13)
Contact with community mental health staff, any	23 (77)	32 (82)
Extent of service use[c] in previous 6 months [mean (SD)]		
A&E attendances for any reason[g]	0.60 (0.81)	0.18 (0.51)
A&E attendances for self-harm[h]	0.23 (0.50)	0.03 (0.16)
Contacts with mental health staff	6.9 (8.3)	6.4 (8.0)
Notes[a] record violence [No. (%)]		
To partner/family members	11 (37)	8 (21)
To others	7 (23)	5 (13)
To property	5 (17)	5 (13)
Forensic history		
Criminal conviction, ever [No. (%)]	21 (70)	21 (54)
Total convictions[d] [mean (SD; median; range)]	4.4 (5.7; 3; 0–22)	4.5 (8.6; 1; 0–39)
Violent crime conviction, ever [No. (%)]	11 (37)	11 (28)
Convictions for violent crime[d] [mean (SD; range)]	1.0 (1.8; 0–7)	0.8 (2.5; 0–12)
Custodial sentence, ever [No. (%)]	10 (33)	7 (18)
Number custodial sentences[d] [mean (SD; range)]	0.4 (0.7; 0–2)	0.3 (0.8; 0–4)

[a]Case notes were available from 22 of the ASPD group and 33 of the ASS group.
[b]From case notes and health service databases.
[c]From health service databases.
[d]Excluding one outlier in the ASS group with > 50 convictions and > 4 custodial sentences.
[e]$\chi^2 = 5.36$, df = 1, p = .021, Yate's corrected.
[f]$\chi^2 = 3.90$, df = 1, p = .048, Yate's corrected.
[g]t = 2.64, df = 67, p = .01.
[h]t = 2.17, df = 33.52, p = .037.

have tended to show the ASPD group as more prevalent. We cannot, however, comment on relative prevalence of the ASS group in comparison with those with ASPD in the general population. This is because our sample is derived from a pool of people who (a) were seeking treatment, and (b) had been considered by their referrers to be likely to have a personality disorder (of any type) without any requirement for evidence of antisocial traits.

With reference to the earlier literature, our findings generally agree with Black and Braun (9), who were unable to distinguish the two groups on socio-demographic data, medical history and psychiatric symptoms, and with Langbehn and Cadoret (8), who were unable to detect clinically important differences between patients with ASPD and those with ASS even though they found several adult and CD criteria had significant, specific associations with biological or environmental background. Also, in our study, the four childhood criteria most commonly met were the same for both groups which adds to the evidence that ASS is not qualitatively different from ASPD.

To some extent the work reported here replicates that carried out by Black and Braun and addresses some of the limitations that those authors identified in their earlier study. First, it focused on a community sample which may be more representative than the more dysfunctional inpatient group studied previously. In our sample, the proportion of those ever convicted (70% of ASPD; 54% of ASS) was rather less than reported by Black & Braun (94% of ASPD; 74% of ASS), and the proportion of those with violent convictions (37% of ASPD; 28% of ASS) was also less than those reported in the earlier study (47% of ASPD; 26% of ASS). Second, Axis II diagnosis was

determined by conducting systematic face-to-face interviews rather than by case note review which, arguably, results in greater precision. Third, additional data derived from self-report psychometric measures are presented for a significant proportion of our sample; we are not aware of any other published study that contains comparable data for these two diagnostic groups.

In terms of the psychometric measures, the only significant differences were in terms of self-reported anger. Significantly greater levels of trait anger emerged for the ASPD group. Scores from the ASPD group also indicated significantly higher levels of outward anger expression and lower levels of anger control compared to the ASS group. Taken together, these results imply that those in the ASPD group felt anger more frequently, expressed it more often and had less ability to control it than did those in the ASS group. These findings are again in keeping with the idea that ASS is less a severe form of ASPD.

Why some individuals do not display antisocial traits until adulthood is unclear although some interaction between genetic and environmental factors seems plausible. DiLalla and Gottesman's review (6) of delinquency and criminality hypothesized three subgroups: 'transitory delinquents,' a group not considered here, who are delinquent as youths but not criminal as adults; 'continuous antisocials' who are delinquent as youths and criminal as adults and who parallel the ASPD group; and 'late bloomers' who are non-delinquent as youths but become criminal as adults and who parallel the ASS group. DiLalla and Gottesman concluded that genetic factors were most prominent among 'continuous antisocials' and 'late bloomers'; they also suggest that the latter may have experienced fewer environmental pressures during adolescence. Our own clinical experience together with feedback from the assessors who carried out IPDE assessment interviews in the current study prompts us to suggest another possibility—that some of those in the ASS group had little opportunity to display antisocial behavior in childhood because of restrictions imposed by controlling parental figures or institutions. Whilst this was not explored in any systematic way within this investigation, we suggest it as a possible focus for further research.

A study of the type reported here has a number of limitations. First, though our sample is larger than that studied by Black and Braun (9), the numbers involved are relatively small which limits the generalizability of our findings. Second, the sample was of treatment-seeking individuals who were living in the community and it is unclear whether the findings reported here would apply to similar groups of individuals who were not seeking help. Third, the population from which our sample was obtained was not generally antisocial, unlike some other studies where the sample was criminal by definition and where there was little doubt about the presence or extent of a forensic history.

As already noted, our study is strengthened by the use of face-to-face diagnostic interviews and the IPDE is known to be highly reliable when used by experienced and trained clinicians (24). It is, however, essentially a self-report assessment and to some extent relies on interviewees being truthful in their responses and accurate in their recollections. It is possible that some participants answered inaccurately about past antisocial behaviors, and that these inconsistencies went undetected despite our attempts to triangulate against data from other sources. As previously noted, self-report can result in both false-positive and false-negative errors, particularly for recalled childhood behaviors (10). Acknowledging this, the assessors took steps to check against a secondary source wherever there was uncertainty about whether a clear research diagnosis could be made, and scored the IPDE conservatively if any uncertainty remained. We also acknowledge that errors can occur when gathering data from the Offenders' Index where some convictions may occasionally go unreported (16,25), although the process of cross checking against medical notes will again have helped to reduce such errors.

CONCLUSIONS

Our results may be considered as confirming and adding to findings from previous studies with the advantage that here PD diagnosis was obtained by formal structured interview. They confirm the existence of a group of antisocial adults without evidence of CD in childhood and suggest that the relative size of this ASS group in relation to ASPD can be significant. We found few differences between the two groups, suggesting that antisocial adult behavior without childhood conduct disorder does not represent a different entity to ASPD although it may represent a less severe form. Whilst further research is needed to confirm this, we suggest there is already sufficient evidence from this and previous studies for revision to criteria for ASPD in future versions of DSM. We concur with Black & Braun who consider the possibility that "those who fulfil the adult criteria . . . should be considered to have full-blown ASPD even when conduct disorder either is not present, is too mild to diagnose, or simply cannot be verified." We also draw attention to the very real possibility that a significant proportion of those who will not be diagnosed as ASPD using a structured interview will fall into the ASS category.

Further research is needed, not only to clarify genetic and environmental risk factors for antisocial behavior over lifespan but also to explore the possibility that the absence of childhood conduct disorder may be attributable to environmental factors such as, for example, physical or psychological constraints which limit the opportunity for acting out.

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