



The Clinical, Forensic, and Treatment Outcome factors of patients with Autism Spectrum Disorder treated in a Forensic Intellectual Disability Service

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Abstract:	<p>Background: To describe the characteristics of those with autism spectrum disorder (ASD) treated within a forensic intellectual disability hospital and to compare them with those without ASD.</p> <p>Method: Service evaluation of a cohort of 138 patients treated over a 6 year period.</p> <p>Results: Of the 138, 42 had an ASD. Personality disorders and harmful use or dependence on drugs were significantly lower in the ASD group. The ASD group was less likely to be subject to criminal sections or restriction orders. Self-harm was significantly higher in the ASD group. There were no differences in the length of stay and direction of care pathway.</p> <p>Conclusions: Although the ASD and non-ASD groups differ on clinical and forensic characteristics, their treatment outcomes appear similar. This suggests that the diagnostic category of ASD alone may be inadequate in predicting the treatment outcome. There is a case to identify distinct typologies within the ASD group.</p>

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Keywords

1. Intellectual Disability
2. Learning Disability
3. Autistic Spectrum Disorder
4. Forensic
5. Comorbidity
6. Treatment Outcomes

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The Clinical, Forensic, and Treatment Outcome Factors of Patients with Autism Spectrum Disorder Treated in a Forensic Intellectual Disability Service**Introduction**

Autism spectrum disorder (ASD) is characterised by deficits in social communication and interaction; including social-emotional reciprocity, nonverbal communicative behaviours, and with developing, maintaining, and understanding relationships (American Psychiatric Association, 2013). People with ASD can present with preoccupations, stereotyped behaviours, sensitivities, obsessive-compulsive behaviours, and anxiety (Gunasekaran 2012). The National Autistic Society (2013a) suggests there are approximately 700,000 people in the UK with ASD.

The offending behaviour of those with ASD is subject to a degree of clinical and media interest, evidenced by the volume of case studies describing serious offending behaviour of those with ASD (e.g. Baron-Cohen 1988; Chen *et al.* 2003; Chesterman & Rutter 1993; Schwartz-Watts 2005; Cooper *et al.* 1993; Everall & Le Couter 1990; Mawson *et al.* 1985; Milton *et al.* 2002; Murrice *et al.*, 2002; Silva *et al.* 2002), and sensationalist media reporting of criminal cases (Howlin 1997; Allen *et al.* 2008; Gómez de la Cuesta 2010).

The prevalence of offending behaviour by those with ASD is unknown. Studies from forensic settings (e.g. secure hospitals and prisons) suggest ASD is over-represented, with reported rates between 1.5% to 30% (Scragg & Shah 1994; Alexander *et al.* 2011). However, studies have been limited by methodological issues including single service samples, selected populations and lacking cohesiveness in the definition and assessment of ASD (Gómez de la Cuesta 2010). Further, those with ASD experience disadvantage when interacting with criminal justice agencies, particularly police interviews (Archer & Hurley 2013; North *et al.* 2008). Those with

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adequate language skills may not appear vulnerable, meaning that police and courts fail to provide support to assist with communication and protect the individual's rights. Archer and Hurley (2013) note that defendants with ASD often present with a lack of empathy / remorse and so may be more harshly sentenced.

Regardless of exact prevalence rates, there are significant numbers of people with autism spectrum disorder within criminal justice settings. Despite the high level of clinical interest in this group, research focusing on sociodemographic, clinical and forensic characteristics, and treatment outcomes is scarce. In terms of socio-demographic factors, it has been suggested that the majority of offenders with ASD are male (Dein & Woodbury-Smith 2010), though notably Crocombe and colleagues (2006) found roughly 10% of women in a high secure unit met ICD-10 criteria for ASD. Regarding comorbidity, Woodbury-Smith (2005) reported that 19% of an offender group with Asperger syndrome met antisocial personality disorder criteria. Woodbury-Smith (2008) reported increased prevalence of anxiety, depression, sleep problems and other developmental disorders (e.g. Tourette syndrome, attention-deficit hyperactivity disorder). Studies also suggest offenders with ASD have different forensic profiles to other offender groups. Murphy (2003) reported no high secure hospital patients with Asperger syndrome had any history of serious antisocial behaviour or criminal convictions before age 18.

Murphy (2010) suggested that issues with behavioural and social interactions mean this group can present clinical challenges and be difficult to engage therapeutically within forensic services. Traditional markers of therapeutic progress used within forensic services, such as stable behaviour, may not evidence the same progress in those with ASD (Dein & Woodbury-Smith, 2010). Wing (1997) notes that

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patients with ASD may behave in an exemplary manner in a particular environment, but reoffend if transferred to an inappropriate or unfamiliar setting.

Haw *et al.* (2013) examined the characteristics of 51 male forensic patients with ASD in low secure care, comparing them to 43 patients without ASD. The authors reported numerous significant differences between the groups. Those with ASD were younger (27 vs. 33 years) and younger at their first contact with psychiatric services. Almost 75% of those with ASD had psychiatric comorbidity, most commonly schizophrenia; and 4.4% had personality disorders. Drug and alcohol disorders were uncommon, though many had histories of misuse. Those with ASD were more likely to be admitted from prison or courts. Over 75% had a history of physical violence and a third convictions for serious violence or homicide. Offending behaviour was described as atypical, involving uncommon offences, e.g. harassment or stalking.

ASD is prevalent in forensic intellectual disability populations, with reported rates ranging from 15.8% (Alexander *et al.* 2006) to 30.44% (Alexander *et al.* 2010; 2011). However, research examining the clinical comorbidities, forensic histories and treatment outcomes of those with ASD in forensic intellectual disability populations is scarce. This paper aims to further investigate these areas.

Method

This study was part of a service evaluation project of a 64 bed specialised forensic inpatient intellectual disability service in England. The service has a nationwide catchment area and accepts referrals from settings such as prisons and other secure services. Findings have been described earlier (e.g. Alexander *et al.* 2010; 2011). This paper examines the autism spectrum disorder (ASD) group in further detail. All patients treated within the service over a 6-year period were

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included in the study. Retrospective case file data collection was done by three authors (R.A., I.G., S.H.) who treated these patients in their capacity as Consultant Psychiatrists. Patients with autism spectrum disorder (ASD) were identified. The clinical, forensic and treatment outcome profiles of those with ASD were investigated and compared to those without ASD treated over the same period. Definitions of clinical, forensic and treatment outcome variables are as follows:

Clinical variables

- *Age*
- *Gender*
- *Diagnosis*: The service had an established structure of assessments (Selby & Alexander, 2004) and used ICD-10 diagnostic criteria (World Health Organization, 1992) to generate a diagnosis for each patient. This covered the degree and cause of ID, autism spectrum disorder, personality disorders, mental illnesses, harmful use or dependence on alcohol or illicit drugs, physical disorders, psychosocial stress factors and behavioural problems. This system captures the extensive comorbidity experienced by offenders with ID.
- *Abuse*: Evidence of a child protection, or protection of vulnerable adult response by social services had to be documented before abuse was recorded as present.
- *Self-harm*: Self-harm history recorded as either present or absent.

Forensic variables

- *Legal Status*: Patients within the service are detained under the Mental Health Act 1983. Although all had some degree of offending behaviour, not all went through the criminal justice process. Sections 35–38, 47 and 48 of the Mental Health Act, where the detention order is made by a court or Ministry of Justice were designated as ‘criminal sections’. The study also recorded ‘restriction orders’, a

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Mental Health Act (1983) provision where power to discharge patients is taken from the treating clinician and given to the Mental Health Review Tribunal or Ministry of Justice.

- *Conviction history*: Three categories of past convictions were recorded; violent (interpersonal physical violence), sexual and arson.
- *Aggression history*: Five parameters of aggression were recorded as present or absent: verbal, aggression to people, to property, sexual, and fire setting. This aimed to capture those whose behaviour had not been processed by the criminal justice system.

Treatment outcome variables

For treatment outcomes analysis, the study group was divided into two subgroups; discharged patients, and those not yet discharged.

- *Institutional Aggression*: Use of seclusion, physical intervention and observation and pro re nata (PRN) medication were used as proxy measures for institutional aggression. Data on these interventions were only available for 114 patients.
- *Length of Stay*: Mean length of stay was calculated for discharged patients, and those not yet discharged from the service during the study period.
- *Direction of Care Pathway and Discharge Placement*: A 'good' outcome was defined by the patient being discharged to a lower level of security. A 'poor' outcome was a discharge to the same or higher level of security. For discharged patients, the placement was recorded, e.g. were they discharged to another hospital, or directly to the community; on a guardianship order, supervised discharge, or as an informal patient.

Ethics

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Ethical approval was sought from the Norfolk (1) Research Ethics Committee who advised the project was service development, and did not need to be ethically reviewed under the Governance Arrangements for Research Ethics Committees in the UK.

Statistical analysis

Data was analysed using SPSS – Version 20. Fishers exact tests were used for comparison of categorical variables and Mann–Whitney U-test for comparison of means.

Results

Of the 138 patients, 42 (30%) had autism spectrum disorder. The clinical, forensic, and treatment outcome factors of this group were explored, and compared to those without ASD.

Clinical variables

The clinical factors are described in Table 1.

Insert Table 1: Comparison between those with ASD and those without: Clinical variables

Forensic variables

Table 2 describes results on forensic histories and offending behaviours.

Insert Table 2: Comparison between those with ASD and those without: Forensic variables

Treatment Outcomes

Table 3 displays the information on treatment outcomes.

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*Insert Table 3: Comparison between those with ASD and those without:
Treatment Outcomes*

Discussion

Despite large numbers of people with autism spectrum disorder being treated within forensic intellectual disability services, there is limited research focusing on them. This study examined the clinical, forensic, and treatment outcome factors associated with this group. The sample is drawn from a single service and hence readers should be cautious about drawing generalisable conclusions. The study used a service evaluation, retrospective methodology, which limited the hypotheses explored within the data. Further, the study did not use standardised instruments or structured assessments to establish the ASD diagnosis. Those of normal or above average intelligence diagnosed with Asperger's may be under-represented in the sample because the study is from a unit for those with an intellectual disability.

However the study does report treatment over a six year period, has one of the largest samples described so far in this area, and is based in a unit which has a structured approach to diagnosis. Further, the clinicians involved were directly involved in the treatment of all patients throughout the period described. Thus, notwithstanding the drawbacks, the study highlights a number of interesting findings, for a patient group about which there is very limited published literature.

Forensic Factors

That conviction rates are a poor marker for the size of the problem behaviour in intellectual disability services is well known to practising clinicians. This study indicates this effect extends to those with ASD within such services. For all offence types, e.g. violence, sexual or arson, solely focusing on convictions appears to undercount the numbers by a factor of at least three. This may be due to carers of those with ASD being less likely to involve the police when an offence is committed

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(Lyll *et al.* 1995; Clare, & Murphy 1998). Further, the police or crown prosecution service may not deem prosecuting those with ASD who commit offences to be in the public interest. This highlights the need for careful history taking that thoroughly investigates past behaviour, (whether labelled as challenging or offending) and uses that information to plan treatment.

Those with ASD were less likely to be subject to criminal sections or restriction orders than other patients. This suggests that even if offending behaviour is reported and taken forward, those with ASD were treated less harshly by the criminal justice system. This contrasts with Archer and Hurley (2013), who noted that defendants with ASD may be sentenced more punitively. The reasons for this contrast are unclear. It may reflect the picture in one service and would be worth exploring in larger samples.

Clinical Factors and Treatment Outcomes

Only six women had a diagnosis of ASD. This is in keeping with previous findings (e.g. Dein, & Woodbury-Smith 2010), but also reflective of the gender composition of the study service.

Those with ASD had a wide range of co-morbidity. Epilepsy was relatively prevalent. Substance abuse was present in a minority of patients, while schizophrenia and personality disorder were more prevalent. These findings somewhat contrast with those reported by Haw *et al.* (2013) who found high levels of schizophrenia, but low levels of personality disorder. Such comorbidity is likely to significantly impact the approach to treatment. Indeed, the symptoms of schizophrenia are likely to require stabilisation before the individual could proceed with further psychological treatments. Likewise, this range of co-morbidity will require careful consideration

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when assessing risk in this population, separate from the inherent features of ASD (Palermo 2004; Murphy 2003; Newman & Ghaziuddin 2008).

The majority of those with ASD had histories of self-harm. This was significantly higher than those without ASD. Research focusing on self-harm in forensic intellectual disability populations is relatively scarce (Brown & Beail, 2009), however, this is not an isolated finding. Rojahn *et al.* (2010) compared those with intellectual disabilities, with and without comorbid ASD on a range of measures, and found those with intellectual disability and ASD demonstrated higher levels of self-injurious behaviour. This finding indicates the need for careful treatment plans to address self-harm in patients with ASD within forensic services.

Despite the wealth of clinical interest in this area, research describing interventions and their outcomes for offenders with ASD is scarce (Murphy *et al.* 2007). Three major reports on autism and offending behaviour provide little emphasis on treatment (National Autistic Society, 2011; Birmingham City Council, 2011; Scottish Executive Social Research, 2004). A number of treatment approaches for individuals with ASD within forensic settings have recently been described. These include individual case treatments (Kelbrick & Radley, 2013), the ten-point treatment programme (Alexander *et al.* 2011) and psychological treatments, such as the adapted version of the Equipping Youth to Help One Another Programme (EQUIP; Gibbs *et al.* 1995; Langdon 2013). Most of these interventions incorporate the core principles of the SPELL approach (National Autistic Society 2013b).

On treatment outcomes, Hare *et al.* (1999) reported those with ASD in high secure care had significantly longer lengths of stay than those without, though the patients in this study did not have an intellectual disability. In our study, although the ASD group differed from those without on certain clinical and forensic

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characteristics, there were no significant differences on treatment outcomes, defined by length of stay, and direction of care pathway. The ASD diagnosis alone may therefore be inadequate in predicting treatment outcomes. There is a case to identify distinct typologies within the ASD group that may help to better delineate variations within this diagnostic group. This will better inform the most useful interventions for the different subtypes. This requires further examination in a larger, multicentre sample.

For Review Only

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Tables

Table 1: Comparison between those with ASD and those without: Clinical variables

Examined measure	ASD diagnosis	No ASD diagnosis	Statistical test	CI 95% (OR)
<i>Number of patients</i> - 138	42 (30%)	96 (70%)	n/a	
Age on admission (Median, Mean, s.d.)	31, 30.14 (9.14)	29, 30.56 (9.38)	n.s.	n/a
Gender				
Male	36 (86%)	73 (76%)	n.s.	n/a
Female	6 (14%)	23 (24%)	n.s.	n/a
Past experience of abuse				
Any abuse	17 (40.5%)	51 (53.1%)	n.s.	n/a
Any sexual abuse	14 (33.3%)	41 (42.7%)	n.s.	n/a
Self-harm	41 (97.6%)	70 (72.9%)	.001	2 - 116.4 (15.3)
Diagnostic comorbidity				
Psychosis	6 (14.3%)	21 (21.9%)	n.s.	n/a
Bipolar disorders	4 (9.5%)	11 (11.5%)	n.s.	n/a
Depressive disorders	3 (7.1%)	19 (19.8%)	n.s.	n/a
Harmful use or dependence on substances	5 (11.9%)	34 (35.4%)	.004	0.09 - 0.7 (0.3)
PD (Flamboyant cluster)	15 (35.7%)	62 (64.6%)	.003	0.1 - 0.7 (0.3)
PD (Dissocial)	14 (33.3%)	54 (56.3%)	.016	0.2 - 0.8 (0.4)
PD (Emotionally Unstable)	6 (14.3%)	32 (33.3%)	.023	0.1 - 0.9 (0.3)
Epilepsy	11 (26.2%)	10 (10.4%)	n.s.	n/a

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Table 2: Comparison between those with ASD and those without: Forensic variables

Examined measure	ASD diagnosis	No ASD diagnosis	Statistical test	CI 95% OR
<i>Number of patients</i> - 138	42 (30%)	96 (70%)	n/a	
Legal status on admission				
Detentions under 'criminal' sections	11 (26.2%)	43 (44.8%)	n.s.	n/a
Detentions with a restriction order	2 (4.8%)	23 (24%)	.007	0 - 0.7 (0.2)
History of convictions				
Conviction for violent offences	13 (30.1%)	50 (52.1%)	n.s.	n/a
Conviction for sex offences	5 (11.9%)	36 (37.5%)	n.s.	n/a
Conviction for arson	2 (4.8%)	12 (12.5%)	n.s.	n/a
History of aggression				
Verbal aggression	42 (100%)	88 (91.7%)	n.s.	n/a
Aggression towards people	39 (92.9%)	86 (89.6%)	n.s.	n/a
Aggression towards property	40 (95.2%)	83 (86.5%)	n.s.	n/a
History of sexual aggression	17 (40.5%)	25 (26%)	n.s.	n/a
History of fire setting	6 (14%)	24 (25%)	n.s.	n/a

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Table 3: Comparison between those with ASD and those without: Treatment Outcome variables

Examined measure	ASD diagnosis	No ASD diagnosis	Statistical test
Institutional aggression* - mean (SD) <i>Number of patients - 114</i>	36	78	
Physical Intervention	3.86 (8.24)	1.82 (4.04)	.016
Seclusion	1.29 (1.97)	74 (1.98)	n.s.
Observation	6.62 (7.68)	2.76 (4.37)	.000
Pro re nata medication (PRN)	5.11 (6.43)	3.92 (5.41)	n.s.
Length of Stay – (mean, median, (s.d.))			
Discharged - <i>Number of patients - 77</i>	28 (66.6%) 1323.7, 925, (1101.8)	49 (51%) 1372.08, 1080.0, (983.2)	n.s.
Not yet discharged - <i>Number of patients - 61</i>	14 (33.3%) 1524, 1052.0,(1570)	47 (49%) 1781, 1323.0,(1505)	n.s.
Outcomes for Discharged Patients – <i>Number of patients - 78</i>	28	49	
Direction of Care Pathway			
Care pathway: good outcome	24 (86%)	43 (88%)	n.s
Care pathway: poor outcome	4 (14%)	6 (12%)	n.s
Discharge Placement†			
Community- informal	3 (10.7%)	10 (20.4%)	n.s
Community- guardianship	3 (10.7%)	3 (6.1%)	n.s.
Community- supervised discharge	3 (10.7%)	2 (4%)	n.s.
Hospital section	15 (53.4%)	28 (57.1%)	n.s.

* The total number of each intervention was divided by the total number of months of inpatient stay for each patient and an average monthly intervention figure was generated.

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