Supporting young people with neurodevelopmental impairment

Dr Nathan Hughes
Dr Prathiba Chitsabesan

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About the authors:

Dr Nathan Hughes is Senior Lecturer in the School of Social Policy at the University of Birmingham, and Marie Curie Research Fellow at the Murdoch Childrens Research Institute, Melbourne. His current research examines the relationship between neurodevelopmental impairment and experiences of criminality and criminalisation, as well as criminal justice responses to young adults.

Dr Prathiba Chitsabesan is a Consultant Child and Adolescent Psychiatrist and Honorary Research Fellow at the University of Manchester and the Manchester Academic Health Science Centre. She has a special interest in research exploring the needs of young offenders and the subsequent implications for policy and practice. As a member of the Offender Health Research Network she has been involved in the development of the Comprehensive Health Screening Tool for the Department of Health and Youth Justice Board.

Centre for Crime and Justice Studies
2 Langley Lane
Vauxhall
London SW8 1GB
info@crimeandjustice.org.uk
www.crimeandjustice.org.uk

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What are neurodevelopmental impairments?

Childhood neurodevelopmental impairments are physical, mental or sensory functional difficulties caused by disruption in the development of the brain or other aspects of the nervous system (Patel et al., 2011). Such functional difficulties can include: cognitive deficits, including with learning or executive functioning; communication difficulties, including with language comprehension, expression or speech; and emotional or socio-affective deficits, including withdrawal or anxiety, or difficulties in restraining emotional reactions. They can result from a complex range of causes, including: genetics; pre-birth or birth trauma; traumatic brain injury, infection or illness in childhood; or extreme nutritional, educational or emotional deprivation.

This broad range of impairments are commonly experienced as one or more clinically defined neurodevelopmental disorder, such as: intellectual/learning disability; specific learning disorders; communication disorders; attention deficit hyperactivity disorder (ADHD); autistic spectrum disorders; and fetal alcohol spectrum disorders (Patel et al., 2011; American Psychiatric Association, 2013). The key symptoms of these disorders are presented in the table below.

Neurodevelopmental impairments in the youth justice system

It is clear that experiences of neurodevelopmental impairment increase the likelihood of involvement with the criminal justice system. A wealth of research signifies the high prevalence of neurodevelopmental disorders among young offenders. This is particularly apparent in studies of young people in custodial institutions. For example, our systematic review of research examining the prevalence of traumatic brain injury suggests that head injuries resulting in a loss of consciousness of 20 minutes or more are nearly four times more prevalent among incarcerated young people than in the general youth population (Hughes et al., 2015). Similar discrepancies are apparent in relation to other neurodevelopmental disorders, as presented in the table below (Hughes et al., 2012). For example, between 60 and 90 per cent of young people in custody have been assessed as having a significant communication impairment, compared to only five to seven per cent among the general youth population. Similarly, estimates of the prevalence of learning disability among young people in custody range

Table 1: Symptoms and prevalence of neurodevelopmental disorders (Hughes et al., 2012)

	Symptoms (based on APA, 2013)	Prevalence rates	
		General youth population	Young people in custody
Learning / Intellectual Disability	Significant deficits in cognitive capacity and adaptive functioning. (i.e. significant difficulties with everyday tasks)	2 – 4%	23 – 32%
Communication Disorders	Problems with speech, language or hearing that significantly impact upon an individual's academic achievement or day-to-day social interactions.	5 – 7%	60 – 90%
Attention-Deficit / Hyperactivity Disorder	Persistence in multiple symptoms of inattention, hyperactivity and/or impulsivity.	1.7 – 9%	12%
Autistic Spectrum Disorder	Qualitative abnormalities in reciprocal social interactions and communication, and markedly restricted repetitive and stereotyped patterns of behaviour and interests.	0.6 – 1.2%	15%
Foetal Alcohol Spectrum Disorder	Characteristic facial features, below average height and weight, and a varied combination of behavioural and developmental dysfunction, including hyperactivity, learning difficulties, poor social skills, and emotional dysregulation.	0.1 – 5%	10.9 – 11.7%

from 23 to 32 per cent, compared to two to four per cent among the general population. (For specific studies, see Hughes et al., 2012).

It seems therefore that significant proportions of young people in custody have one or more neurodevelopmental disorder. What's more, this is likely to be an underestimate of the proportion of young people affected by particular symptoms or sub-clinical levels of impairment. This suggests the widespread failure of current policies and practices to meet their primary aim to prevent offending and re-offending when working with young people with neurodevelopmental impairment. It further suggests that, as a result, the youth justice system – and the custodial estate in particular – has become the primary service provider to a large number of young people with significant neurodevelopmental impairment.

This is clearly inappropriate. The youth justice system, and custodial institutions in particular, are not equipped to recognise and respond effectively to needs relating to neurodevelopmental impairment. Insufficient training (McKenzie et al., 2000) and inadequate assessment tools (Harrington and Bailey, 2005) have resulted in poor recognition of neurodevelopmental impairment within the youth justice system. The recent introduction of the Comprehensive Health Assessment Tool in custodial and, latterly, some community settings offers the potential to address this by supporting recognition of 'neurodisability' (Offender Health Research Network, 2013). However, screening is insufficient in itself and is occurring too late, if at the point of custody, or any criminal justice intervention.

There is a range of barriers to engaging in the legal process. Young people with cognitive impairments can struggle to engage with forensic interviewing techniques that require them to tell their story out of chronological order (Snow and Powell, 2011) and to understand everyday terminology used by police or in the courtroom (Sanger et al., 2001). Communication impairments may result in poor presentation – monosyllabic responses, poor eye contact, shrugs of the shoulders – which 'may be mistaken for deliberate rudeness and willful non-compliance' (Snow and Powell, 2011), and therefore interpreted as behavioural and attitudinal, rather than related to impairment.

It is also clear that relevant specialist interventions remain limited in the criminal justice system (Talbot, 2010). This therefore calls into question whether Articles 37 and 40 of the United Nations Convention on the Rights of the Child are being upheld for this population. These articles establish the need for children and young people in the criminal justice system to be dealt with in ways that take account of their specific developmental needs, including through approaches that promote care, guidance and support. Instead youth justice interventions are often generic, assuming typical levels of verbal and cognitive competence, including the cognitive skills necessary to reflect on and change thinking, values and beliefs (Snow and Powell, 2012). Such approaches are unlikely to be effective with many young people with neurodevelopmental impairment (Hayes, 2002). This is inherently tautological: the failings of the system to effectively support these young people so as to prevent re-offending reinforce their involvement with the system and its continued failure to do so, resulting in a higher subsequent risk of eventual custodial intervention.

An alternative approach is therefore clearly needed: one that is rooted in an understanding of the relationship between impairment and behaviour, and engages the young person accordingly; one that recognizes the crucial importance of effective educational support; and one that supports families to provide effective care.

Understanding the links between impairment and offending

An appreciation of the array of factors and experiences affecting young people with neurodevelopmental impairments suggests various means to more appropriately intervene so as to address related needs, and in doing so counter the risk of offending, as well other potential negative outcomes for young people. Whilst this is not to imply that neurodevelopmental impairment is necessarily the single or predominant explanation for criminality, or that a young person's complex life can be adequately understood through the lens of impairment, insights into specific disorders support greater understanding of the influence of neurodevelopmental impairment on behaviour. In particular, cognitive and emotional traits that are symptomatic of neurodevelopmental impairment can give rise to the expression of aggressive or antisocial behaviour in particular social situations, therefore increasing vulnerability towards criminality. For example:

- The behavioural expression of ADHD is characterised by a combination of symptoms, including impulsivity, which is implicated in certain forms of antisocial behaviour (National Institute for Health and Clinical Excellence (NICE), 2008). A de-coupling of cognition and emotion can be expressed as impatience, sensation-seeking and difficulties in restraining emotional reactions, increasing the likelihood of

spontaneous, impulsive acts, particularly in response to provocation or conflict.

- Specific deficits in executive functioning apparent in a range of neurodevelopmental disorders are known to influence antisocial behaviour by reducing inhibition, preventing the self-regulation of contextually appropriate behaviour, or impairing the ability to anticipate consequences (Ogilvie et al., 2011; Morgan and Lilienfeld, 2000).
- Communication impairments may result in difficulties understanding and expressing emotions, or the use of inappropriate non-verbal communication techniques, such as challenging behaviour, as a means to communicate feelings (Ryan et al., 2013). Deficits in social communication can also influence the formation of peer relationships, lead to a heightened desire to want to be accepted by peers, and therefore increase the risk of engagement in criminality, if associating with criminal peers (Botting and Conti-Ramsden, 2000; Baldry, et al., 2011). Such impairments are also associated with difficulties in understanding the perspective of others (Brownlie et al., 2004; Snow and Powell, 2011).

Understanding these associations allows for the interpretation of behaviour as the potential expression of neurodevelopmental impairment rather than criminality, and therefore for the utilisation of support known to be effective in enabling a young person to develop strategies and coping mechanisms to deal with these behaviours accordingly. For example, guidelines on how to support young people with specific neurodevelopmental disorders are already established and can be readily utilised, including, for example, those published by the NICE regarding ADHD (NICE, 2008) and autistic spectrum disorders (NICE, 2011). There is also growing evidence in support of the efficacy of specific approaches to managing impairments and associated behaviour; for example, skills development using social stories and comic strip cartoons can address emotional regulation and the management of stress and conflict (Murphy, 2010).

Maintaining educational engagement through specialist support

Recognition and response to neurodevelopmental impairment is also key to a variety of experiences that can serve to increase or counter risk of offending. In particular, a failure to identify and respond appropriately to the learning needs of young people with neurodevelopmental impairment may be key to potential disengagement with education, and may therefore be directly implicated in the onset of problem behaviour.

Without an appropriate awareness of impairment, behaviour may be attributed to the wrong underlying cause. A cognitive or social-affective impairment may therefore be misinterpreted as a behavioural problem and, on this basis, the child may attract inaccurate and inappropriate labels and responses. Law and colleagues (2013) provide an illustrative example of how communication difficulties may be misinterpreted in the classroom:

> *What manifests in the classroom as a 'behaviour problem' (e.g. failure to negotiate appropriately with other children around access to equipment) may in fact be more appropriately described as a skill deficit, i.e. an inadequate repertoire of socially sanctioned linguistic skills to enable prosocial engagement with others and attainment of goals.*

Such misinterpretation is equally possible in relation to the need to move around the classroom due to hyperactivity, or in the difficulties translating verbal directions into action experienced by young people with Foetal Alcohol Spectrum Disorder - unless the classroom teacher is alert to such possible expressions of impairment.

Where neurodevelopmental impairment has been identified, early and sustained interventions to maintain attachment to school have been shown to have a greater chance of success compared with attempting to re-engage young people (Youth Justice Board, 2006). For example, the early identification of neurodevelopmental difficulties can enable targeted support during the significant changes to classroom teaching that occur at age eight. Research regarding language impairments shows that those who have struggled to successfully engage with the formal literacy instruction of the first three years of school may 'struggle enormously' at this stage. 'For boys in particular, this is often a time when externalising behaviour difficulties becomes apparent in the classroom.' (Snow and Powell, 2012). Similarly awareness of need at primary school can allow young people to be appropriately supported in the challenging transition to secondary school.

Children exhibiting early signs of difficulty should therefore be routinely assessed for underlying cognitive and emotional needs so as to support appropriate attempts to maintain educational engagement, with the aim of not only reducing offending but also promoting better educational outcomes. Mainstream education

services should have a transparent framework for assessment, including a requirement to access specialist review and advice prior to exclusion.

Identification also supports referral for specialist intervention. Needs resulting from neurodevelopmental impairments are complex, often requiring clinical assessment, support and intervention, and therefore the skills of trained, specialist professionals, such as educational psychologists, child and adolescent mental health professionals, and speech therapists (see, for example, Hare and Paine, 1997; Murphy, 2010; NICE, 2008, 2011).

Comprehensive support for parents and families

Of course this is not simply the responsibility of schools. As well as education services, practitioners working in family intervention projects, social services and primary health care settings, as well as in community youth justice services, require support to recognise and understand issues relating to neurodevelopmental impairment.

Greater support and information provision to parents and families is also key. Parenting a child with a neurodevelopmental impairment can clearly bring a range of challenges, particularly when that impairment is not appropriately diagnosed or support services are not adequate. Such challenges can inadvertently lead to the use of parenting practices that serve to increase the risk of problematic behaviour, including a reduction in positive parenting or ineffective discipline. For example, Deault's (2010) systemic review of parenting children with ADHD demonstrates relationships between 'oppositional and conduct problems' and 'a lack of positive parenting practices' and/or 'a negative or ineffective discipline style'.

Families are a vital resource in supporting young people; however, families need to be supported if they are to maintain an effective and consistent level of care to a child with complex needs, such as those associated with neurodevelopmental impairment (Hughes, 2010). This might include greater investment in parenting support programmes known to be effective for young people with specific impairments (Scott, 2008; NICE, 2009). It also suggests the need for ongoing engagement with and support to parents, including the provision of information regarding potential future symptoms and expressions of particular impairments, so as to support the identification and appropriate response to functional and behavioural difficulties that may emerge during childhood and adolescence. For example, a childhood traumatic brain injury might result in symptoms experienced only later in adolescence when affected parts of the brain are being utilized for higher order cognitive functions. Parents and therefore schools might not attribute this impairment appropriately without ongoing support and information.

Given the genetic component of neurodevelopmental disorders such as ADHD and Austistic Spectrum Disorder, the parents of young people with impairment can also demonstrate similar cognitive or socio-affective difficulties. This can cause additional challenges in providing atuned parental responses to a child's needs. The specific needs of parents must therefore also be considered. At present access to support for adults with ADHD and ASD remains limited in many areas.

Conclusion

This brief discussion provides a basic framework for comprehensive support that can both prevent future offending and enable positive outcomes, in particular by maintaining educational engagement and supporting families. It suggests a need for earlier identification and responsive interventions based on an increased awareness among a range of professionals and services regarding how behaviour might be influenced or explained by neurodevelopmental impairment. Inevitably better screening and identification leads to greater demand for specialist support services. Whilst this may present challenges and resource implications for universal and targeted services for young people and their families, not to act is to be in breach of our duties of care and to increase the risk of criminalisation for young people made vulnerable due to neurodevelopmental impairment.

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