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2 ANTISOCIAL BEHAVIOUR AND CONDUCT DISORDERS IN CHILDREN AND YOUNG PEOPLE

2.1. INTRODUCTION

This guideline is concerned with the management of conduct disorder and oppositional defiant disorder, as defined in the *International Classification of Diseases, 10th Revision* (ICD-10) (World Health Organization, 1992) and the *Diagnostic and Statistical Manual of Mental Disorders, 4th Edition Text Revision* (DSM-IV-TR) (American Psychiatric Association, 2000), and associated antisocial behaviour in primary, community and secondary care. Conduct disorder is an overarching term used in psychiatric classification that refers to a persistent pattern of antisocial behaviour in which the individual repeatedly breaks social rules and carries out aggressive acts that upset other people. Oppositional defiant disorder is a milder variant mostly seen in younger children. The term 'conduct disorders' (or 'a conduct disorder') is used in this guideline to encompass both disorders. Because the term is not well known among the public, or even among healthcare professionals, the guideline title includes the term 'antisocial behaviour' to make it clear to as wide a range of people as possible what the guideline addresses.

Globally, conduct disorders are the most common mental health disorders of childhood and adolescence, and they are the most common reason for referral to child and adolescent mental health services (CAMHS) in Western countries. A high proportion of children and young people with conduct disorders grow up to be antisocial adults with impoverished and destructive lifestyles; a significant minority will develop antisocial personality disorder, among whom the more severe will meet criteria for psychopathy. Conduct disorders in childhood and adolescence are becoming more frequent in Western countries and place a large personal and economic burden on individuals and society, involving not just healthcare services and social care agencies but all sectors of society including the family, schools, police and criminal justice agencies. It is therefore appropriate that this guideline has been developed by NICE jointly with SCIE.

2.1.1. Medicalising a social problem?

Infringement of the rights of other people is a requirement for the diagnosis of a conduct disorder. Because manifestations of conduct disorders and antisocial behaviour include a failure to obey social rules despite relatively intact mental and social capacities, many have seen the disorders as principally socially determined. It could therefore be argued that the responsibility for their cause and elimination lies solely with people who can influence the socialisation process, such as parents, schoolteachers, social service departments and politicians, rather than by healthcare professionals. Additionally, because the disorders are so prevalent, it would be logistically impossible for CAMHS to see all children and young people – adding a further reason not to medicalise the problem. Certainly, all of the above mentioned agencies have major roles to play in the recognition, assessment and management of conduct disorders/antisocial behaviour.

However, there are several reasons why CAMHS services also have a role to play. First, advances in the last three decades have shown that in addition to social causes there are substantial genetic and biological contributions to conduct disorders/antisocial behaviour; therefore, the contribution of these factors needs to be assessed and factored into intervention plans. Second, many children and young people exhibiting conduct disorders/antisocial behaviour have coexistent mental health and learning problems, or disorders that require recognition and assessment, including for example attention and concentration problems (attention deficit hyperactivity disorder [ADHD]), attachment problems, traumatic memories (post-traumatic stress disorder [PTSD]), autistic traits and dyslexia. Third, the quality of the parent–child relationship needs to be assessed systematically using well-validated constructs; this will include assessment of mental health problems in the parents such as depression and alcohol and drug problems. Fourth, all of

these factors need to be weighted and judged for their relative contribution in the individual concerned, and an appropriate intervention plan drawn up taking these into account, including personal meanings and cultural sensitivities. Finally, it is mainly work from the fields of child and adolescent psychology and mental health that has clarified many of the mechanisms contributing to the development and persistence of antisocial behaviour, and has led this discipline to develop notably effective treatments, mostly psychosocial in nature, which are often not available from other agencies. This knowledge needs to be disseminated more widely so that more children can benefit; at present fewer than a quarter of affected children and young people receive any specific help (Vostanis et al., 2003), and much of this is likely to be ineffective (Scott, 2007). There is therefore a need for mental health professionals to work closely alongside other professionals and agencies and contribute to the planning and delivery of humane and effective services. Failure to achieve this will mean that great numbers of children and young people will have their lives avoidably blighted.

2.2. THE DISORDER

This guideline is concerned with the management of conduct disorder in the community and in prison as defined in ICD-10 (World Health Organization, 1992) and DSM-IV-TR (American Psychiatric Association, 2000) (see Section 2.3 for details about the classification of both conduct disorder and oppositional defiant disorder).

Aggressive and defiant behaviour is an important part of normal child and adolescent development, which ensures physical and social survival. Indeed, some parents may express concern if a child is too acquiescent and unassertive. The level of aggressive and defiant behaviour varies considerably among children, and it is probably most usefully seen as a continuously distributed trait. Empirical studies do not suggest a level at which symptoms become qualitatively different, nor is there a single cut-off point at which they become impairing for the child or a clear problem for others. There is no 'hump' towards the end of the distribution curve of severity to suggest a categorically distinct group who might on these grounds warrant a diagnosis of conduct disorder.

Picking a particular level of antisocial behaviour to call conduct disorder or oppositional defiant disorder is therefore necessarily arbitrary (Moffitt et al., 2008). For all children, the expression of any particular behaviour also varies with age; physical hitting, for example, is at its peak at around 2 years of age and declines to a low level over the ensuing years. Therefore any judgement about the significance of the level of antisocial behaviour has to be made in the context of the child's age. Before deciding that the behaviour is atypical or a significant problem, a number of other clinical features have to be considered:

- *level*: severity and frequency of antisocial acts, compared with children of the same age and gender (see Sections 2.2.1 and 2.2.2)
- *pattern*: the variety of antisocial acts, and the setting in which they are carried out (see Section 2.2.3)
- *persistence*: duration over time (see Section 2.2.3)
- *impact*: distress and social impairment of the child; disruption and damage to others (see Section 2.2.4).

It should be noted that the making of a diagnosis of a conduct disorder only means that at the time, the individual concerned has been behaving in a way that meets the specified criteria. It is purely a phenomenological description and carries no implications about the cause in any particular case. The child may spontaneously change over time and so no longer meet criteria for a diagnosis. In some, the origins might be entirely outside the child, with the child reacting as any child might to a coercive, traumatic or abusive upbringing. In others, it might be that the child had had a completely benign upbringing but was born with callous-unemotional traits that were displayed in all social encounters. Thus the use of a diagnosis is fully consistent with a biopsychosocial approach to the understanding and treatment of the presenting phenomena.

2.2.1. Changes in clinical features with age

Younger children aged 3 to 7 years usually present with general defiance of adults' wishes, disobedience of instructions, angry outbursts with temper tantrums, physical aggression to other people (especially siblings and peers), destruction of property, arguing, blaming others for things that have gone wrong, and a tendency to annoy and provoke others.

In *middle childhood*, from 8 to 11 years, the above features are often present, but as the child grows older and stronger, and spends more time outside the home, other behaviours are seen. They include: swearing, lying about what they have been doing, stealing others' belongings outside the home, persistent breaking of rules, physical fights, bullying other children, being cruel to animals and setting fires.

In *adolescence*, from 12 to 17 years, more antisocial behaviours are often added: being cruel to and hurting other people, assault, robbery using force, vandalism, breaking and entering houses, stealing from cars, driving and taking away cars without permission, running away from home, truanting from school, and misusing alcohol and drugs.

Not all children who start with the type of behaviours listed in early childhood progress on to the later, more severe forms. Only about half continue from those in early childhood to those in middle childhood; likewise, only about a further half of those with the behaviours in middle childhood progress to show the behaviours listed for adolescence (Rowe et al., 2002). However, the early onset group are important as they are far more likely to display the most severe symptoms in adolescence, and to persist in their antisocial tendencies into adulthood. The most antisocial 5% of children aged 7 years are 500 to 1000% more likely to display indices of serious life failure at 25 years, for example drug dependency, criminality, unwanted teenage pregnancy, leaving school with no qualifications, unemployment and so on (Fergusson et al., 2005). Follow-back studies show that most children and young people with conduct disorders had prior oppositional defiant disorder and most (if not all) adults with antisocial personality disorder had prior conduct disorders. Likewise about 90% of severe, recurrent adolescent offenders showed marked antisocial behaviour in early childhood (Piquero et al., 2010). In contrast, there is a large group who only start to be antisocial in adolescence, but whose behaviours are less extreme and who tend to become less severe by the time they are adults (Moffitt, 2006).

2.2.2. Gender

Severe antisocial behaviour is less common in girls than in boys; they are less likely to be physically aggressive and engage in criminal behaviour, but more likely to show spitefulness and emotional bullying (such as excluding children from groups and spreading rumours so others are rejected by their peers), and engage in frequent unprotected sex (which can lead to sexually transmitted disease and pregnancy), drug abuse and running away from home. Whether there should be specific criteria for diagnosing conduct disorder in girls is debated (Moffitt et al., 2008).

2.2.3. Pattern of behaviour and setting

The severity of conduct disorder is not determined by the presence of any one symptom or any particular constellation, but is due to the overall volume of symptoms, determined by the frequency and intensity of antisocial behaviours, the variety of types, the number of settings in which they occur (for example home, school, in public) and their persistence. For general populations of children, the correlation between parent and teacher ratings of conduct problems on the same measures is low (only 0.2 to 0.3), which means that there are many children who are perceived to be mildly or moderately antisocial at home but well behaved at school, and vice versa. However, for more severe antisocial behaviour there are usually manifestations both at home and at school.

2.2.4. Impact

At home, the child or young person with a conduct disorder is often exposed to high levels of criticism and hostility, and sometimes made a scapegoat for a catalogue of family misfortunes. Frequent punishments and physical abuse are not uncommon. The whole family atmosphere is often soured and siblings also affected. Maternal depression is often present, and families who are unable to cope may, as a last resort, give up the child to be cared for by the local authority. At school, teachers may take a range of measures to attempt to control the child or young person, bring

order to the classroom and protect the other pupils, including sending the child or young person out of the class, which sometimes culminates in permanent exclusion from the school. This may lead to reduced opportunity to learn subjects on the curriculum and poor examination results. The child or young person typically has few, if any, friends, and any friends become annoyed by their aggressive behaviour. This often leads to exclusion from many group activities, games and trips, thus restricting the child or young person's quality of life and experiences. On leaving school, the lack of social skills, low level of qualifications and, possibly, a police record make it harder to gain employment.

2.3. CLASSIFICATION

2.3.1. Diagnosis

The ICD-10 classification has a category for conduct disorders (F91). The ICD-10 'Clinical Descriptions and Diagnostic Guidelines' (World Health Organization, 1992) states:

> *Examples of the behaviours on which the diagnosis is based include the following: excessive levels of fighting or bullying; cruelty to animals or other people; severe destructiveness to property; fire-setting; stealing; repeated lying; truancy from school and running away from home; unusually frequent and severe temper tantrums; defiant provocative behaviour; and persistent severe disobedience. Any one of these categories, if marked, is sufficient for the diagnosis, but isolated dissocial acts are not.* (F91)

An enduring pattern of behaviour should be present, but no time frame is given and there is no impairment or impact criterion stated.

The ICD-10 'Diagnostic Criteria for Research' (World Health Organization, 1992) differ, requiring symptoms to have been present for at least 6 months, and the introductory rubric indicates that impact upon others (in terms of violation of their basic rights), but not impairment of the child, can contribute to the diagnosis. The research criteria take a menu-driven approach whereby a certain number of symptoms have to be present. Fifteen behaviours are listed to be considered for a diagnosis of conduct disorder, which usually but by no means exclusively apply to older children and young people. The behaviours can be grouped into four classes:

a. **Aggression to people and animals:**

   1. often lies or breaks promises to obtain goods or favours or to avoid obligations
   2. frequently initiates physical fights (this does not include fights with siblings)
   3. has used a weapon that can cause serious physical harm to others (for example bat, brick, broken bottle, knife, gun)
   4. often stays out after dark despite parental prohibition (beginning before 13 years of age)
   5. exhibits physical cruelty to other people (for example ties up, cuts or burns a victim)
   6. exhibits physical cruelty to animals.

b. **Destruction of property:**

   7. deliberately destroys the property of others (other than by fire-setting)
   8. deliberately sets fires with a risk or intention of causing serious damage).

c. **Deceitfulness or theft:**

   9. steals objects of non-trivial value without confronting the victim, either within the home or outside (for

example shoplifting, burglary, forgery).

d. **Serious violations of rules:**

10 . is frequently truant from school, beginning before 13 years of age

11 . has run away from parental or parental surrogate home at least twice or has run away once for more than a single night (this does not include leaving to avoid physical or sexual abuse)

12 . commits a crime involving confrontation with the victim (including purse-snatching, extortion, mugging)

13 . forces another person into sexual activity

14 . frequently bullies others (for example deliberate infliction of pain or hurt, including persistent intimidation, tormenting, or molestation)

15 . breaks into someone else's house, building or car.

To make a diagnosis, at least three behaviours from the 15 listed above have to be present, one for at least 6 months. There is no impairment criterion. There are three subtypes: 'conduct disorder confined to the family context' (F91.0), 'unsocialised conduct disorder' (F91.1, where the young person has no friends and is rejected by peers) and 'socialised conduct disorder' (F91.2, where peer relationships are normal). It is recommended that age of onset be specified, with childhood-onset type manifesting before 10 years and adolescent-onset type after 10 years. Severity should be categorised as mild, moderate or severe according to the number of symptoms or impact on others, for example causing severe physical injury, vandalism or theft.

For younger children, usually up to 9 or 10 years old (although it can in theory be used up to 18 years), there is a list of eight symptoms for the subtype known as 'oppositional defiant disorder' (F91.3):

1. has unusually frequent or severe temper tantrums for his or her developmental level
2. often argues with adults
3. often actively refuses adults' requests or defies rules
4. often, apparently deliberately, does things that annoy other people
5. often blames others for his or her own mistakes or misbehaviour
6. is often 'touchy' or easily annoyed by others
7. is often angry or resentful
8. is often spiteful or resentful.

To make a diagnosis of the oppositional defiant type of conduct disorder, four symptoms from either this list or the conduct disorder 15-item list must be present, but no more than two from the latter. Unlike for the conduct disorder variant, there is an impairment criterion for the oppositional defiant type: the symptoms must be maladaptive and inconsistent with the child or young person's developmental level.

Where there are sufficient symptoms of a comorbid disorder to meet diagnostic criteria, ICD-10 discourages the application of a second diagnosis, and instead offers a single, combined category for the most common combinations. There are two major kinds: mixed disorders of conduct and emotions, of which depressive conduct disorder (F92.0) is the best researched; and hyperkinetic conduct disorder (F90.1). There is modest evidence to suggest these combined conditions may differ somewhat from their constituent elements.

DSM-IV-TR follows the ICD-10 research criteria very closely and does not have separate clinical guidelines. The same 15 behaviours are given for the diagnosis of conduct disorder (312.8, American Psychiatric Association, 2000),

with almost identical wording. As in ICD-10, three symptoms need to be present for diagnosis. Severity and childhood or adolescent onset are also specified in the same way. However, unlike ICD-10, there is no division into socialised/unsocialised or family context, only into types, and there is a requirement for the behaviour to cause 'clinically significant impairment in social, academic, or social functioning'. Comorbidity in DSM-IV-TR is handled by giving as many separate diagnoses as necessary, rather than by having single, combined categories.

In DSM-IV-TR, oppositional defiant disorder is classified as a separate disorder, not as a subtype of conduct disorder. Diagnosis requires four from a list of eight behaviours, which are the same as ICD-10; but, unlike ICD-10, all four have to be from the oppositional list and none may come from the conduct disorder list. In older children it is debated whether oppositional defiant disorder is fundamentally different from conduct disorder in its essential phenomena or any associated characteristics, and the value of designating it as a separate disorder is arguable. In this guideline, the term 'conduct disorders' will henceforth be used as it is in ICD-10, to refer to all variants including oppositional defiant disorder. The term 'conduct problems' will be used for less severe antisocial behaviour.

'Juvenile delinquency' is a legal term referring to an act by a young person who has been convicted of an offence that would be deemed a crime if committed by an adult. Most but not all recurrent juvenile offenders have conduct disorder.

2.3.2. Differential diagnosis

Making a diagnosis of conduct disorder is usually straightforward, but comorbid conditions are often missed. Differential diagnosis may include:

1. *Hyperkinetic syndrome and attention deficit hyperactivity disorder*. These are the names given by ICD-10 and DSM-IV-TR, respectively, for similar conditions, except that the former is more severe. For convenience, the term 'hyperactivity' will be used here. It is characterised by impulsivity, inattention and motor overactivity. Any of these three sets of symptoms can be misconstrued as antisocial, particularly impulsivity, which is also present in conduct disorders. However, none of the symptoms of conduct disorders are a part of hyperactivity so excluding conduct disorders should not be difficult. A frequently made error, however, is to miss comorbid hyperactivity when conduct disorder is definitely present. Standardised questionnaires are very helpful here, such as the Strengths and Difficulties Questionnaire (SDQ), which is brief and just as effective at detecting hyperactivity as much longer alternatives (Goodman & Scott, 1999).
2. *Adjustment reaction to an external stressor.* This can be diagnosed when onset occurs soon after exposure to an identifiable psychosocial stressor such as divorce, bereavement, trauma, abuse or adoption. The onset should be within 1 month for ICD-10 and 3 months for DSM-IV-TR, and symptoms should not persist for more than 6 months after the cessation of the stress or its sequelae.
3. *Mood disorders.* Depression can present with irritability and oppositional symptoms, but, unlike typical conduct disorder, mood is usually clearly low and there are vegetative features (difficulties with basic bodily processes, such as eating, sleeping and feeling pleasure); also, more severe conduct problems are absent. Early bipolar disorder can be harder to distinguish because there is often considerable defiance and irritability combined with disregard for rules, and behaviour that violates the rights of others. Low self-esteem is the norm in conduct disorders, as is a lack of friends or constructive pastimes. Therefore it is easy to overlook more pronounced depressive symptoms. Systematic surveys reveal that around a third of children with a conduct disorder have depressive or other emotional symptoms severe enough to warrant a diagnosis.
4. *Autistic spectrum disorders.* These are often accompanied by marked tantrums or destructiveness, which may be the reason for seeking a referral. Enquiring about other symptoms of autistic spectrum disorders should reveal their presence.
5. *Dissocial and antisocial personality disorder.* In ICD-10 it is suggested that a person should be 17 years or older before dissocial personality disorder can be considered. Because from the age of 18 years most diagnoses specific to childhood and adolescence no longer apply, in practice there is seldom a difficulty in terms of formal

diagnosis. In DSM-IV-TR, conduct disorder can be diagnosed in people over 18 years, so there is potential overlap. A difference in emphasis is the severity and pervasiveness of the symptoms of those with personality disorder, whereby all the individual's relationships are affected by the behaviour pattern, and the individual's beliefs about his antisocial behaviour are characterised by callousness and lack of remorse.

In contrast to a formal diagnosis of dissocial or antisocial personality disorder, however, there has been an explosion of interest in the last decade in what have been termed psychopathic traits in childhood. The characteristics of the adult psychopath include grandiosity, callousness, deceitfulness, shallow affect and lack of remorse. Can the 'fledgling psychopath' be identified in childhood? Certainly there are now instruments that reliably identify callous-unemotional traits such as lack of guilt, absence of empathy and shallow, constricted emotions in children (Farrington, 2005). Further research has shown that callous-unemotional traits in childhood are associated with a failure to inhibit aggression in response to signs of distress in others, arising from a deficit in processing victims' distress cues, and reduced ability to recognise fear and sadness (Blair et al., 2005). In longitudinal studies such children go on to be more aggressive and antisocial than others without such traits (Moran et al., 2009), and they are harder to treat, responding less well to interventions (Haas et al., 2011; Hawes & Dadds, 2005).

6. *Subcultural deviance.* Some young people are antisocial and commit crimes but are not particularly aggressive or defiant. They are well-adjusted within a deviant peer culture that approves of recreational drug use, shoplifting and so on. In some areas, one third or more of young males fit this description and would meet ICD-10 diagnostic guidelines for socialised conduct disorder. Some clinicians are unhappy to label such a large proportion of the population with a psychiatric disorder. Using DSM-IV-TR criteria would preclude the diagnosis for most young people like this due to the requirement for significant impairment.

2.3.3. Multiaxial assessment

ICD-10 recommends that multiaxial assessment be carried out for children and young people, while DSM-IV-TR suggests it for all ages. In both systems Axis 1 is used for psychiatric disorders that have been discussed above. The last three axes in both systems cover general medical conditions, psychosocial problems and level of social functioning; these topics will be discussed in Section 2.5. In the middle are two axes in ICD-10, which cover specific (Axis 2) and general (Axis 3) learning disabilities; and one in DSM-IV-TR (Axis 2), which covers personality disorders and general learning disabilities.

Both specific and general learning disabilities are essential to assess in children and young people with a conduct disorder. A third of children with a conduct disorder have a reading level two standard deviations (SDs) below that predicted by the person's IQ (Trzesniewski et al., 2006). While this may in part be due to lack of adequate schooling, there is good evidence that the cognitive deficits often precede the behavioural problems. General learning disability is often missed in children and young people with a conduct disorder unless IQ testing is carried out. The rate of conduct disorder increases several-fold in those with an IQ below 70.

This chapter describes the general pattern of behaviour that comprises conduct disorder and alternative diagnoses. When considering an individual child or young person, the assessment, formulation and management plan will, of course, not only consider the presence or absence of behaviours but will also cover many other issues, including the particular circumstances and influences that led to the presentation, the family's strengths and resources, and the meanings ascribed to the situation.

2.4. EPIDEMIOLOGY

In the large 1999 and 2004 British surveys carried out by the Office of National Statistics, 5% of children and young people aged 5 to 15 years met the ICD-10 criteria for conduct disorders with a strict impairment requirement (Green et al., 2005). A modest rise in diagnosable conduct disorder over the second half of the twentieth century has also been observed when comparing assessments of three successive birth cohorts in Britain (Collishaw et al., 2004). In terms of class, there is a marked social class gradient with conduct disorders more prevalent in social classes D and E

compared with social class A (Green et al., 2005). With regard to ethnicity, young people's self-reports of antisocial behaviours as well as crime victim survey reports of perpetrators' ethnicity show an excess of offenders of black African ancestry, whereas children and young people of British Asian ancestry show lower rates compared with their white counterparts (Goodman et al., 2010).

2.4.1. Gender differences in prevalence

The gender ratio is approximately 2.5 males for each female, with males further exceeding females in the frequency and severity of behaviours. On balance, research suggests that the causes of conduct problems are the same for both genders, but males have more conduct disorders because they experience more of its individual-level risk factors (for example hyperactivity and neurodevelopmental delays). However, in recent years there has been increasing concern among clinicians about treating antisocial behaviour among girls (Pullatz & Bierman, 2004).

2.4.2. Lifecourse differences

There has been much evidence to support a distinction between antisocial behaviour first seen in early childhood versus that seen first in adolescence, and these two subtypes are included in the DSM-IV-TR. Early onset clearly predicts continuation through childhood. Those with early onset have a lower IQ, more ADHD symptoms, lower scores on neuropsychological tests, greater peer difficulties and are more likely to come from dysfunctional family backgrounds (Moffitt, 2006). Those with later onset become antisocial mainly as a result of social influences, including association with a deviant peer group, and typically have no neuropsychological abnormalities. Findings from the follow-ups of large cohorts show poorer adult outcomes for the early-onset group in domains of violence, mental health, substance misuse, work and family life (Moffitt, 2006). However, the adolescent-onset group, who were originally named 'adolescence limited', were not without adult difficulties, hence the name change. As adults they still engaged in self-reported offending, and they also had problems with alcohol and drugs. Thus the age-of-onset subtype distinction has strong predictive validity, but adolescent-onset antisocial behaviours may have more long-lasting consequences than previously supposed.

2.5. AETIOLOGY

2.5.1. Individual-level characteristics

Genes

Fewer than 10% of the families in any community account for more than 50% of that community's criminal offences, which reflects the coincidence of genetic and environmental risks. There is now solid evidence from twin and adoption studies that conduct problems assessed both dimensionally and categorically are substantially heritable (Moffitt, 2005). However, knowing that conduct problems are under some genetic influence is less useful clinically than knowing that this genetic influence appears to be reduced, or enhanced, depending on interaction with circumstances in the child or young person's environment. Several genetically sensitive studies have allowed interactions between family genetic liability and rearing environment to be examined. Both twin and adoption studies have reported an interaction between antisocial behaviour in the biological parent and adverse conditions in the adoptive home that predicted the adopted child's antisocial outcome, so that the genetic risk was modified by the rearing environment. For example, one twin study (Jaffee et al., 2003) found the experience of maltreatment was associated with an increase of 24% in the probability of diagnosable conduct disorder among children at high genetic risk, but an increase of only 2% among children at low genetic risk. Such gene–environment interactions are being increasingly discovered (Dodge et al., 2011). It is important to emphasise that because conduct disorders are partially genetically caused does not mean that environmental or psychosocial interventions will not work. The opposite is true: awareness of a familial liability toward psychopathology increases the urgency to intervene to improve a child or young person's social environment (Odgers et al., 2007).

The search for specific genetic polymorphisms is a fairly new scientific initiative. The candidate gene that is most studied in relation to conduct problems is the monoamine oxidase type A (MAOA) promoter polymorphism. The gene encodes the MAOA enzyme, which metabolises neurotransmitters linked to aggressive behaviour. Positive and negative replication studies have appeared, and a meta-analysis of these studies showed the association between MAOA genotype and conduct problems is modest but statistically significant (Kim-Cohen et al., 2006). Little replication has yet been accomplished using genome-wide association studies (Dick et al., 2011).

Perinatal complications and temperament

Recent large-scale general population studies have found associations between life-course persistent-type conduct problems and perinatal complications, minor physical anomalies and low birth weight (Brennan et al., 2003). Most studies support a bio-social model in which obstetric complications might confer vulnerability to other co-occurring risks such as hostile or inconsistent parenting. Smoking in pregnancy is a statistical risk predictor of offspring conduct problems (Brennan et al., 2003), but a causal link between smoking and conduct problems has not been established. Several prospective studies have shown associations between irritable temperament and conduct problems (Keenan & Shaw, 2003).

Neurotransmitters

In general, the findings with children have not been consistent. For example, in the Pittsburgh Youth cohort, boys with long-standing conduct problems showed downward changes in urinary adrenaline level following a stressful challenge task, whereas prosocial boys showed upward responses (McBurnett et al., 2005). However other studies have failed to find an association between conduct disorder and measures of noradrenaline in children (Hill, 2002). It should be borne in mind that neurotransmitters in the brain are only indirectly measured, that most measures of neurotransmitter levels are crude indicators of activity and that little is known about neurotransmitters in the juvenile brain.

Cognitive deficits

Children with conduct problems have been shown consistently to have increased rates of deficits in language-based verbal skills (Lynam & Henry, 2001). The association holds after controlling for potential confounds such as race, socioeconomic status, academic attainment and test motivation. Children who cannot reason or assert themselves verbally may attempt to gain control of social exchanges using aggression (Dodge, 2006); there are also likely to be indirect effects in which low verbal IQ contributes to academic difficulties, which in turn means that the child or young person’s experience of school becomes unrewarding rather than a source of self-esteem and support.

Children and young people with conduct problems have been shown consistently to have poor tested executive functions (Ishikawa & Raine, 2003); (Hobson et al., 2011). Executive functions are the abilities implicated in successfully achieving goals through appropriate and effective actions. Specific skills include learning and applying contingency rules, abstract reasoning, problem solving, self-monitoring, sustained attention and concentration, relating previous actions to future goals, and inhibiting inappropriate responses. These mental functions are largely, although not exclusively, associated with the frontal lobes.

Autonomic nervous system

A low resting pulse rate or slow heart rate is associated with antisocial behaviour, (Ortiz & Raine, 2004). Also, a slow skin-conductance response to aversive stimuli is found (Fung et al., 2005).

Social perception

Dodge (Dodge, 2006) proposed a model for the development of antisocial behaviours in social interactions. Children liable to behave aggressively focus on threatening aspects of others’ actions, see them as hostile when they are neutral, and are more likely to choose an aggressive solution to social challenges. Several studies have supported these processes (Dodge, 2006).

2.5.2. Risks within the family

Family disadvantage

There is an association between severe disadvantage and antisocial behaviour in children. The association between disadvantage and childhood antisocial behaviour is indirect, mediated via family relationships such as interparental discord and parenting quality, which is discussed below.

Parenting style

Parenting styles related to antisocial behaviour were described by Patterson in his major work *Coercive Family Process* (Patterson, 1982). Parents of children with conduct problems were less consistent in their use of rules, gave more vague commands, were more likely to react to their children based on how they felt (for example more bad mood) rather than based on what the child was actually doing, were less likely to check their children's whereabouts and were unresponsive to their children's sociable behaviour. Patterson proposed a specific mechanism for the promotion of oppositional and aggressive behaviours in children whereby a parent responds to mild irritating child behaviour with a prohibition to which the child responds by escalating their behaviour, and each then raises their anger until the parent backs down, thus negatively reinforcing the child's behaviour. Conduct problems are associated with hostile, critical, punitive and coercive parenting.

Of course, other explanations need to be considered: first, that the associations reflect familial genetic liability toward children's psychopathology and parents' coercive discipline; second, that they represent the effects of children's behaviours on parents; and third, that harsh parenting may be a correlate of other features of the parent–child relationship or family functioning that influence children's behaviours. There is considerable evidence that children's difficult behaviours do indeed evoke parental negativity. The fact that children's behaviours can evoke negative parenting does not however mean that negative parenting has no impact on children's behaviour. The E-Risk longitudinal twin study of British families (Trzesniewski et al., 2006) examined the effects of fathers' parenting on young children's aggression. As expected, a prosocial father's *absence* predicted more aggression by his children. But in contrast, an antisocial father's *presence* predicted more aggression by his children, and his harmful effect was exacerbated the more time each week he spent taking care of the children.

The strong contribution of harsh, inconsistent parenting with lack of warmth to the causation of conduct problems provides an opportunity for intervention. As evidence presented in this guideline will show, parenting programmes that reverse less optimal patterns of parenting and promote positive encouragement of children with the setting of clear boundaries that are calmly enforced lead to improvement of conduct problems.

Child attachment

The quality of the parent–child relationship is crucial to later social behaviour, and if the child does not have the opportunity to make attachments, for example due to being taken into institutional care, this typically leads to subsequent problems in relating: antisocial behaviour can arise from infant attachment difficulties. One study found that ambivalent and controlling attachment predicted externalising behaviours after controlling for baseline externalising problems; disorganised child attachment patterns seem to be especially associated with conduct problems. Although it seems obvious that poor parent–child relations in general predict conduct problems, it has yet to be established whether attachment difficulties as measured by observational paradigms have an independent causal role in the development of behaviour problems; attachment classifications could be markers for other relevant family risks. However, in adolescence there is evidence that attachment representations independently predict conduct symptoms over and above parenting quality (Scott et al., 2011).

Witnessing interparental or partner violence

Several researchers have found that children exposed to domestic violence between adults are subsequently more likely to themselves become antisocial. In one study, the authors (Cummings & Davies, 2002) proposed that marital

conflict influences children's behaviour because of its effect on emotional regulation. Thus, a child may respond to fear arising from marital conflict by controlling their reactions through denial of the situation. This in turn may lead to inaccurate appraisal of other social situations and ineffective problem solving. Repeated exposure to family fighting or violence increases children's emotional dysregulation, resulting in greater reaction under stress. Children's antisocial behaviour may also be increased by partner discord because children are likely to imitate aggressive behaviour modelled by their parents. Through parental fights, children may learn that aggression is a normal part of family relationships, that it is an effective way of controlling others and that aggression is sanctioned not punished.

Abuse

Many parents use physical punishment, and parents of children with antisocial behaviour frequently resort to it out of desperation. Overall, associations between physical abuse and conduct problems are well established. In the Christchurch longitudinal study, child sexual abuse predicted conduct problems after controlling for other childhood adversities (Fergusson et al., 1996). However, sometimes some parents resort to severe and repeated beatings that are clearly abusive. This typically terrifies the child, causes great pain and overwhelms the ability of the child to stay calm. It leads the children to be less able to regulate their anger and teaches them a violent way of responding to stress. Unsurprisingly, elevated rates of conduct disorder result (Jaffee et al., 2003).

2.5.3. Risks in the community

Risks in the local community

It has been difficult to establish any direct link between neighbourhood characteristics and antisocial child behaviour. Thus, neighbourhood characteristics were seen in overly simple ways, such as percentage of ethnic minority residents or percentage of lone-parent households. Moreover, it could not be disproved that families whose members are antisocial tend selectively to move into 'bad' neighbourhoods. Recent neighbourhood research is attempting to address these issues, and suggests that the neighbourhood factors that are important include social processes such as 'collective efficacy' and 'social control'.

Friendship groups

Children and young people with antisocial behaviour have poorer peer relationships and associate with other children with similar antisocial behaviours. They have more aggressive and unhappy interactions with other children and they experience more rejection by children without conduct disorders (Coie, 2004).

2.5.4. Moving from association to causation

The evidence above shows many associations between antisocial behaviour and a wide range of risk factors. The exact role in causation of most of these risk factors is unknown: while we know what, statistically, predicts conduct-problem outcomes, we do not entirely know how or why. Establishing a causal role for a risk factor is by no means straightforward, particularly as it is unethical to experimentally expose healthy children to risk factors to observe whether those factors can generate new conduct problems. The use of genetically sensitive designs and the study of within-individual change in natural experiments and treatment studies have considerable methodological advantages for suggesting causal influences on conduct problems.

2.6. COURSE AND PROGNOSIS

2.6.1. Factors predicting poor outcome

Of those with early onset conduct disorder (before the age of 8 years), about half have serious problems that persist into adulthood. Of those with adolescent onset, the great majority (over 85%) desist in their antisocial behaviour by their early twenties. Many of the factors that predict poor outcome are associated with early onset (see Table 1).

To detect protective factors, children who do well despite adverse risk factors have been studied. These so-called 'resilient' children, however, have been shown to have lower levels of risk factors, for example a boy with antisocial behaviour and low IQ living in a rough neighbourhood but living with supportive, concerned parents. Protective factors are mostly the opposite end of the spectrum of the same risk factor, thus good parenting and high IQ are protective. Nonetheless, there are factors associated with resilience that are independent of known adverse influences. These include a good relationship with at least one adult (who does not necessarily have to be the parent), a sense of pride and self-esteem, and skills or competencies.

2.6.2. Adult outcome

Studies of groups of children with early-onset conduct disorder indicate a wide range of problems that are not only confined to antisocial acts as shown in Table 2. What is clear is that there are not only substantially increased rates of antisocial acts but also that the general psychosocial functioning of adults who had conduct disorder is strikingly poor. For most of the characteristics shown in Table 2, the increase compared with controls is three- to ten-fold (Fergusson et al., 2005). Thus conduct disorder has widespread ramifications in most of the important domains of life, affecting work and relationships. The strength of the effects emphasises the extensive benefits that can accrue from successful treatment, and the importance of making this available to affected children and young people.

2.6.3. Pathways

The path from childhood conduct disorder to poor adult outcome is neither inevitable nor linear.

Different sets of influences impinge as the individual grows up and shape the life course. Many of these can accentuate problems. Thus a toddler with an irritable temperament and short attention span may not learn good social skills if they are raised in a family lacking them, and where the child can only get their way by behaving antisocially and grasping for what they need. At school they may fall in with a deviant crowd of peers, where violence and other antisocial acts are talked up and give them a sense of esteem. The child's generally poor academic ability and difficult behaviour in class may lead them to truant increasingly, which in turn makes them fall farther behind. They may then leave school with no qualifications and fail to find a job, and resort to drugs. To fund their drug habit they may resort to crime and, once convicted, find it even harder to get a job. From this example, it can be seen that adverse experiences do not only arise passively and independently of the young person's behaviour; rather, the behaviour predisposes them to end up in risky and damaging environments. Consequently, the number of adverse life events experienced is greatly increased (Champion et al., 1995). The path from early hyperactivity into later conduct disorder is also not inevitable. In the presence of a warm supportive family atmosphere conduct disorders are far less likely than if the parents are highly critical and hostile.

Other influences can, however, steer the individual away from and antisocial path. For example, the fascinating follow-up of delinquent boys to up to the age of 70 years (Laub & Sampson, 2003) showed that the following led to desistence: being separated from a deviant peer group; marrying to a non-deviant partner; moving away from a poor neighbourhood; military service that imparted skills.

2.7. TREATMENT

The evidence for the effectiveness of treatments is the subject of the analyses in ensuing chapters. Singly or in combination, they address parenting skills, family functioning, child interpersonal skills, difficulties at school, peer group influences and medication for coexistent hyperactivity.

2.7.1. Parenting skills

Parent training aims to improve parenting skills (Scott, 2008). As the following chapters show, there are scores of randomised controlled trials (RCTs) suggesting that it is effective for children up to about 10 years old. Parenting interventions based on social learning theory address the parenting practices that were identified in research as contributing to conduct problems. Typically, they include five elements:

1. **Promoting play and a positive relationship**

   To cut into the cycle of defiant behaviour and recriminations, it is important to instil some positive experiences for both child and parent and begin to mend the relationship. Helping parents learn the techniques of how to play in a constructive and non-hostile way with their children helps them recognise their needs and respond sensitively. The children in turn begin to like and respect their parents more, and become more secure in the relationship.

2. **Praise and rewards for sociable behaviour**

   Parents are helped to reformulate difficult behaviour in terms of the positive behaviour they wish to see, so that they encourage wanted behaviour rather than criticise unwanted behaviour. For example, instead of shouting at the child not to run, they would praise him whenever he walks quietly; then he will do it more often. Through hundreds of such prosaic daily interactions, child behaviour can be substantially modified. When some parents find it hard to praise, and fail to recognise positive behaviour when it happens, the result is that the desired behaviour becomes less frequent.

3. **Clear rules and clear commands**

   Rules need to be explicit and consistent; commands need to be firm and brief. Thus, shouting at a child to stop being naughty does not tell him what he *should* do, whereas, for example, telling him to play quietly gives a clear instruction which makes compliance easier.

4. **Consistent and calm consequences for unwanted behaviour**

   Disobedience and aggression need to be responded to firmly and calmly by, for example, putting the child in a room for a few minutes. This method of ‘time out from positive reinforcement’ sounds simple, but requires considerable skill to administer effectively. More minor annoying behaviours such as whining and shouting often respond to being ignored, but again parents often find this hard to achieve in practice.

5. **Reorganising the child’s day to prevent trouble**

   There are often trouble spots in the day which will respond to fairly simple measures. For example putting siblings in different rooms to prevent fights on getting home from school, banning television in the morning until the child is dressed and so on.

Treatment can be given individually to the parent and child which enables live feedback in light of the parent’s progress and the child’s response. Alternatively, group treatments with parents alone have been shown to be equally effective. Trials show that parent management training is effective in reducing child antisocial behaviour in the short term for half to two-thirds of families, with little loss of effect at 1- to 3-year follow-up. However, research is now needed on clinical proposals of what interventions can be used for those who do not respond (Scott & Dadds, 2009).

2.7.2. Improving family functioning

Functional family therapy, multisystemic therapy and multidimensional treatment foster care (MTFC) aim to change a range of difficulties which impede effective functioning of young people with conduct disorder. These programmes use a combination of social learning theory, cognitive and systemic family therapy interventions. Functional family therapy addresses family processes, including high levels of negativity and blame, and characteristically seeks to improve communication between parent and young person, reduce interparental inconsistency, tighten up on supervision and monitoring, and negotiate rules and the sanctions to be applied for breaking them. Most other varieties of family therapy have not been subjected to controlled trials for young people with conduct disorder or delinquency so cannot be evaluated for their efficacy. Functional family therapy is an assertive outreach model and sessions typically take place in the family home. There is a manual for the therapeutic approach and adherence is checked weekly by the supervisor.

In multisystemic therapy the young person's and family's needs are assessed in their own context at home and in related systems such as at school and with peers. Following the assessment, proven methods of intervention are used to address difficulties and promote strengths. As for functional family therapy, treatment is delivered in the situation where the young person lives. Second, the therapist has a low caseload (four to six families) and the team is available 24 hours a day. Third, the therapist is responsible for ensuring appointments are kept and for effecting change – families cannot be blamed for failing to attend or 'not being ready' to change. Fourth, regular written feedback on progress towards goals from multiple sources is gathered by the therapist and acted upon. Fifth, there is a manual for the therapeutic approach and adherence is checked weekly by the supervisor.

MTFC is another intervention which has been shown to improve the quality of encouragement and supervision that young people with conduct disorder receive. This is an intensive 'wrap around' intervention. The young person temporarily lives with foster carers who are specially trained and, in addition, receives help from individual therapists at school and in the community. The child's parents are also helped to learn more effective parenting skills.

2.7.3. Anger management and child interpersonal skills

Most of the programmes to improve child interpersonal skills derive from cognitive behavioural therapy (CBT). What the programmes have in common is that the young people are trained to:

- slow down impulsive responses to challenging situations by stopping and thinking
- recognise their own level of physiological arousal, and their own emotional state
- recognise and define problems
- develop several alternative responses
- choose the best alternative response based on anticipation of consequences
- carry out the chosen course of action
- shortly afterwards, give themselves credit for staying in control and review how it went.

Over the longer term, the programmes aim to increase positive social behaviour by teaching the young person to:

- learn skills to make and sustain friendships
- develop social interaction skills such as turn-taking and sharing
- express viewpoints in appropriate ways and listen to others.

2.7.4. Overcoming difficulties at school

These can be divided into learning problems and disruptive behaviour. There are proven programmes to deal with specific learning problems, such as specific reading difficulties, including Reading Recovery[1]. However, few of the programmes have been specifically evaluated for their ability to improve outcomes in children with conduct disorder, although at the time of writing trials are in progress.

There are several schemes for improving classroom behaviour, including those that stress improved communication such as 'circle time' and those which work on behavioural principles or are part of a multimodal package. Some of these schemes specifically target children with conduct problems.

2.7.5. Ameliorating peer group influences

A few interventions have aimed to reduce the bad influence of deviant peers. A number attempted this through group work with other conduct disordered youths, but outcome studies showed a worsening of antisocial behaviour. Current treatments therefore either see youths individually and try to steer them away from deviant peers, or work in small

groups (of around three to five youths) where the therapist can control the content of sessions. Some interventions place youths with conduct disorder in groups with well-functioning youths.

2.7.6. Medication

Where there is comorbid hyperactivity in addition to conduct disorder, several studies attest to a large reduction in both overt and covert antisocial behaviour with the use of medication, both at home and at school (NCCMH, 2010). Medication for pure conduct disorders is less well-established and is reviewed in this guideline.

2.8. GENERAL ISSUES WHEN PLANNING TREATMENT

Engagement of the family is particularly important for this group of children and families because dropout from treatment is high, at around 30 to 40%. Practical measures such as assisting with transport, providing childcare, and holding sessions in the evening or at other times to suit the family will all help. Many of the parents of children with conduct disorder may themselves have difficulty with authority and officialdom, and be very sensitive to criticism. Therefore, the approach is more likely to succeed if it is respectful of their point of view, does not offer overly prescriptive solutions and does not directly criticise parenting style. Practical homework tasks increase changes, as do problem-solving telephone calls from the therapist between sessions.

Parenting interventions may need to go beyond skill development to address more distal factors which prevent change. For example, drug or alcohol abuse in either parent, maternal depression and a violent relationship with the partner are all common. Assistance in claiming welfare and benefits and help with financial planning may reduce stress from debts.

A multimodal approach is likely to see greater changes. Therefore, involving the school or the local education authority in treatment by visiting and offering strategies for managing the child in class is usually helpful, as is advocating for extra tuition where necessary. If the school seems unable to cope despite extra resources, consideration could be given to moving the child to a unit that specialises in the management of behavioural difficulties, where skilled staff may be able to improve child functioning so a later return to mainstream school may be possible. Avoiding antisocial peers and building self-esteem may be helped by the child attending after-school clubs and holiday activities.

Where parents are not coping or a damaging abusive relationship is detected, it may be necessary to liaise with the social services department to arrange respite for the parents or a period of foster care. It is important during this time to work with the family to increase their skills so that the child can return to the family. Where there is permanent breakdown, long-term fostering or adoption may be recommended.

2.9. PREVENTION

Conduct disorder should offer good opportunities for prevention because it can be detected early reasonably well, early intervention is more effective than later and there are a number of effective interventions.

In the US a number of comprehensive interventions have been tested. One of the best known is the Fast Track project (Conduct Problems Prevention Research Group, 2011). Here, the most antisocial 10% of 5- to 6-year-olds in schools in disadvantaged areas were selected, as judged by teacher and parent reports. They were then offered intervention which was given for 1 year in the first instance and comprised:

- weekly parent training in groups with videotapes
- an interpersonal skills training programme for the whole class
- academic tutoring twice a week
- home visits from the parent trainer
- a pairing programme with sociable peers from the class.

From across the US, 891 children were randomised to receive this treatment or be assigned to the control group and the project has cost over $100 million, with the treatment continuing to be given over 10 years on a tailored basis. However, outcomes have been modest. By age 18 there was no overall improvement of antisocial behaviour, although in the most severe cases a diagnosis of conduct disorder was reduced by 50% (Conduct Problems Prevention Research Group, 2011). In the UK, there has been a drive to disseminate parenting programmes widely (Scott, 2010).

Although a review of universal prevention interventions (that is, those aimed at the general population) is outside the scope of this guideline, a range of selective preventions (that is, those aimed at individuals who are at high risk for developing the disorder or are showing very early signs or symptoms) are reviewed.

2.10. ECONOMIC COST

The economic consequence of conduct disorder is characteristically huge, with considerable resource inputs from several government and private sectors. Though the condition can be considered primarily to be a mental health problem (American Psychiatric Association, 2000), the healthcare service provisions for conduct disorder and the resulting healthcare costs are rather small when compared with costs incurred by other sectors such as the criminal justice system (Scott et al., 2001). This is as a result of associated crime committed by the individuals, with resultant significant social costs and harm to individuals and their victims, families and carers, and to society at large (Welsh et al., 2008). Overall, evidence for the cost estimates incurred due to conduct disorder varies widely and tends to be great when a societal perspective is taken.

The cost of conduct disorder, like other health problems, often includes both direct service costs and indirect costs, such as productivity loss as a result of health problems. The extent of direct costs is closely related to the quantity of services utilised by the individual. In comparison with other common types of psychiatric disorders in children and adolescents, those with conduct disorder are more likely to be heavy users of social services than those with emotional disorders or hyperkinetic disorder, and they are also more likely to utilise primary healthcare and specialist education services than those with emotional disorders (Shivram et al., 2009). Similarly, in an earlier work on service utilisation by this population (Vostanis et al., 2003), children with conduct disorder, with or without comorbidity, were observed to be heavy users of health, education and social services compared with those with other form of psychiatric disorders.

Depending on the setting where service is delivered and the prevailing health condition of the individual (for example a child or young person with conduct disorder, conduct problems, oppositional defiant disorder or if they are a juvenile offender), there is considerable variation in the total cost of the services incurred by people with conduct disorders. In a UK study by Scott and colleagues (2001), the cumulative cost of services to individuals diagnosed with conduct disorder at the age of 10 years, over a period of about 18 years, was £70,000 (1998 prices). Costs accumulated by individuals with conduct disorder are about ten times more than those with no conduct problem and three times that of the costs incurred by individuals with conduct problems. Similarly, in a US study comparing the costs of children with conduct disorder, oppositional defiant disorder, elevated levels of problem behaviour and those without any of these disorders (Foster et al., 2005), the mean annual cost of services for the conduct disorder group was estimated as $12,547 (2000 prices), which was about twice the cost of those with oppositional defiant disorder and three times the cost of those without conduct disorder.

Few of the cost studies included costs from all relevant sectors, such as health, education, social services, criminal justice, family and carer, and voluntary sectors, and some studies reported separate cost estimates for services provided to juvenile offenders who were already in contact with the criminal justice system. On average, the annual cost of services incurred by people with conduct disorders and associated problems is between £6,000 (2002/03 prices) and $180,000 (2008 prices) (Romeo et al., 2006; Welsh et al., 2008). Criminal justice service costs are the most significant cost component in most of the studies, accounting for between 19% and 64% of the total costs (Foster et al., 2005; Scott et al., 2001). Other than criminal justice system costs, costs to family and carers, where reported, are the second most significant costs of conduct disorder. In a UK study, the annual cost per child with antisocial behaviour problems without criminal justice costs was estimated to be about £5,960 (2002/03 prices) with

the cost to family accounting for about 79% of the total cost, and health service, education and voluntary services accounting for about 8%, 1% and 3%, respectively. The cost to social services was estimated to be less than 1% of the total cost (Romeo et al., 2006). Similarly, Knapp and colleagues (1999) estimated the annual mean cost of services for ten children aged 4 to 10 years to be £15,270 (1996/97 prices) and described the cost to families as accounting for about 31% of the mean costs, and health service costs as accounting for 16%.

There is little evidence on the annual mean cost of services for individuals who have conduct disorder in addition to other co-existing health problems. Knapp and colleagues reported annual mean service costs per patient with conduct disorder and major depressive disorder to be £1,085, which is about 2.4 times more than those with major depressive disorder only (Knapp et al., 2002). Service domains included in the estimate were health and the criminal justice system, and therefore greatly under-estimate the actual mean service costs for such individuals. Another UK study (Barrett et al., 2006) looked at the cost of services provided to younger offenders (aged 13 to 18 years), either in a community setting or in custody over a 6-month period, and reported an average annual cost of services (excluding costs to families) of £40,000 (2001/02 prices). Services provided in secured accommodation were found to be around three times higher than those provided in the community.

The cost of crime has huge policy implications in estimating the costs of conduct disorder. Because of the strong link between conduct disorder and probable criminal activities, the high cost of crime is often estimated to quantify the extent of the economic consequences of treating conduct disorder. A report by the Sainsbury Centre for Mental Health (2009) estimated that about 80% of all criminal activity is attributable to people who had conduct problems in childhood and adolescence. Methods of crime cost estimation and cost components differ greatly among studies. However, crime costs are generally estimated to include three basic cost categories: costs in the anticipation of crime (for example government crime prevention costs), costs as a consequence of crime (for example victim support services) and costs in response to crime (for example police and court costs), according to the Centre for Criminal Justice (2008) report. Often estimated are costs as a consequence of crime and costs in response to crime, such as tangible service costs and intangible costs (for example pain, suffering or grief suffered by victims of crime) (Cohen, 1998; McCollister et al., 2010). Given the variation in the methods used in crime cost estimation and the cost components included in the estimate, the reported costs of crime are also associated with wide variations. In the US, the reported lifetime costs of crime attributable to a typical offender are in the range of $2.1 to $3.7 million in 2007 US dollars (Cohen & Piquero, 2009) when discounted back to birth. In England and Wales, the lifetime costs of crime per prolific offender are put at around £1.5 million (Sainsbury Centre for Mental Health, 2009). The total cost of crime against individuals and households in 2003/04 pounds was estimated to be around £36.2 billion (Dubourg et al., 2005), and for youths aged between 10 and 21 years the estimated cost of crime in 2009 for Great Britain was reported to be in excess of £1.2 billion, or about £23 million a week (Prince's Trust, 2010).

Taking into consideration the overall lifetime costs of conduct problems, the Sainsbury Centre for Mental Health (2009) estimated that crime-related costs comprise about 71% of the total lifetime costs of people with conduct disorder and 29% for other non-crime related costs. For people with mild or moderate conduct problems, a significant percentage of their lifetime costs is also related to crime (61%). Notwithstanding the extensive literatures on crime costs, there are difficulties in accurately estimating the overall crime costs attributable to children and young people with conduct disorders or the subsequent adverse outcomes in adulthood. Such difficulties are often related to uncertainties in accurately quantifying the value of intangible costs such as fear of crime, pain, suffering or grief suffered by victims of crime (Loomes, 2007; Semmens, 2007; Shapland & Hall, 2007), and other indirect costs such as productivity loss. Aside from the immediate physical health needs of crime victims, mental health needs of crime victims can impose huge costs on both the criminal justice and the health systems when about 20 to 25% of people visiting mental healthcare professionals do so as a result of being victims of crime, at a cost of between $5.8 and $6.8 billion (Cohen & Miller, 1998). As a result, current estimates of the economic cost of conduct disorder can be assumed to be conservative and the actual cost is more likely to exceed the values reported in the literature when all attributed costs are considered.

Footnotes

1 http://readingrecovery.ioe.ac.uk/index.html

Tables

Table 1 Factors predicting poor outcome

Factor	Outcome
Onset	Early onset of severe problems, before 8 years old.
Phenomenology	Antisocial acts which are severe, frequent and varied.
Comorbidity	Hyperactivity and attention problems.
Intelligence	Lower IQ.
Family history	Parental criminality; parental alcoholism.
Parenting	Harsh, inconsistent parenting with high criticism, low warmth, low involvement and low supervision.
Wider environment	Low income family in poor neighbourhood with ineffective schools.

Table 2 Adult outcomes

Characteristic	Outcome
Antisocial behaviour	More violent and non-violent crimes, for example mugging, grievous bodily harm, theft, car crimes, fraud.
Psychiatric problems	Increased rates of antisocial personality, alcohol and drug abuse, anxiety, depression and somatic complaints, episodes of deliberate self-harm and completed suicide, time in psychiatric hospitals.
Education and training	Poorer examination results, more truancy and early school leaving, fewer vocational qualifications.
Work	More unemployment, jobs held for shorter time, jobs with low status and income, increased claiming of benefits and welfare.
Social network	Few (if any) significant friends; low involvement with relatives, neighbours, clubs and organisations.
Intimate relationships	Increased rate of short-lived, violent, cohabiting relationships; partners often also antisocial.
Children	Increased rates of child abuse, conduct problems in offspring, children taken into care.
Health	More medical problems, earlier death.

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