

REPORT

Centre for
Mental Health



THE PURSUIT OF HAPPINESS:
A NEW AMBITION FOR OUR
MENTAL HEALTH



A **CENTREFORUM** COMMISSION

Investing in children's mental health

**A review of evidence on the costs and
benefits of increased service provision**

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Preface by Rt Hon Paul Burstow MP



Just one in four children and young people with mental health problems receive any support or treatment. Research highlights that half of all people with lifelong mental health problems have experienced their first signs and symptoms by the age of 14. Without access to mental health support, it can come as little surprise that problems continue, and in many cases deteriorate.

Children's mental health quickly became a priority for the CentreForum Commission on mental health. We made a set of recommendations for improving access and coverage that would make a significant difference.

One simple question was central to our work - what do we already know? This report by the Centre for Mental Health is the result. It offers a comprehensive stock-take of the evidence on what works.

What is clear from this report is that we already know enough to act. That if there is a will to transform the state of children and young people's mental health, we do know what works.

But this report should not be seen as a menu from which to cherry-pick initiatives. Adding projects to a broken system will not have the long lasting impact necessary. Experts, among them the Minister for Mental Health, are united in agreement that we are well past that point.

What this report offers are the ingredients that, when put together in the right combination, reflecting local need, should be the basis of a new offer for children and young people.

Involving young people in the redesign of CAMHs, measuring and reporting on outcomes must be at the heart of the transformation

that must now take place, just as it was with the Children and Young People (CYP) Improving Access to Psychological Therapy (IAPT) programme which I launched in 2011. It is critical that the voice of children and young people is heard in the service design and that success is measured against delivery of the outcomes that matter to them.

The CAMHS taskforce announced by the Minister for Mental Health, Norman Lamb, last summer offers a once in a generation opportunity to set the direction for change. It must offer politicians a clear set of goals, a route map for reforming the "broken and dysfunctional system" he described.

Get this right and we can reduce the life-long burden of mental illness in our country, fewer adults living with lifelong mental health problems. More children able to make full use of the opportunities education has to offer. More people able to work and contribute. More people living happier, healthier, more fulfilled lives. Above all we have the opportunity to make a serious dent in the scandalous 20 years of lost life expectancy that people with severe and enduring mental health problems face.

The taskforce is due to report in March 2015. This report clearly sets out the value of the tools we already have at our disposal to make this vision a reality.

The Pursuit of Happiness: A New Ambition for Our Mental Health, Centre Forum July 2014

<http://www.centreforum.org/>

Executive Summary

Nearly 10% of children aged 5-16 in this country suffer from a clinically diagnosable mental health condition, but only a minority receive any form of effective intervention.

This is damaging and costly, not only in terms of immediate distress to the children and families concerned but also because untreated childhood mental health problems have a strong tendency to persist into later life, often with a wide range of adverse consequences, including extra costs for individuals, taxpayers and society as a whole.

This report summarises the available evidence on the effectiveness and value for money of interventions for child and adolescent mental health problems.

The most common mental health conditions affecting children and young people are conduct disorder (i.e. severe behavioural problems), anxiety, depression and attention deficit hyperactivity disorder (ADHD).

Our review of the evidence shows that for all these conditions there are interventions that are not only effective in improving outcomes but also good value for money, in some cases outstandingly so, as measured by the surplus of measurable economic benefits over the costs of intervention.

Measurable benefits mainly take the form of savings in future spending on health and other public services and increases in future earnings. These benefits are over and above the more intangible benefits of improved wellbeing and quality of life that are the fundamental justification of investment in children's mental health. Attaching a monetary value to these intangible benefits would increase still further the estimated returns on investment.

Mental health services for children and young people are provided by a wide range of organisations, including the NHS, local authorities, schools and voluntary and community bodies. Many of these organisations have suffered from budget cuts in recent years. The evidence summarised in this report suggests that this comes at a very heavy price in terms of benefits forgone.

1. Introduction

Nearly 10% of children aged 5-16 suffer from a clinically diagnosable mental health condition, but these problems often go unrecognised and untreated, and it is estimated that as many as 60-70% of children and adolescents who experience clinically significant difficulties have not had appropriate interventions at a sufficiently early age (Children's Society, 2008).

This is damaging and costly, not only in terms of immediate distress to the children and families concerned, but also because – in the absence of effective intervention – mental health problems which develop in childhood have a strong tendency to persist into later life, often with a wide range of adverse consequences, including extra costs falling on individuals, the exchequer and wider society.

Against this background, this report summarises the available evidence on the costs and benefits of increased service provision, aimed at reducing the extent of unmet need in child mental health. Detailed analysis is presented in four main areas: conduct disorder, anxiety, depression and ADHD (chapters 2-5 below). These areas have been chosen partly because, as shown in the following table, they correspond to the most common mental health problems affecting children, but also because in all cases there is a good evidence base on the effectiveness and value for money of relevant interventions. Less detailed information is provided on other conditions (chapter 6), mainly because the available evidence allows few clear conclusions on what works in these areas.

The total number of children aged 5-16 in this country is currently around 7.5 million. An overall prevalence of 9.6% thus implies that there are around 720,000 children suffering from any kind of mental health condition, with up to 500,000 of these not currently receiving treatment.

Each of the four chapters below on individual conditions follows broadly the same format. First, we present information on the nature of the condition in question and its prevalence. Second, we summarise the evidence on the effectiveness of relevant interventions, based wherever possible on systematic reviews and meta-analyses, including those published by the Cochrane Collaboration and the National Institute for Health and Care Excellence (NICE). And third, we review the available evidence on the value for money of interventions, including the estimates of costs and benefits given in 'league tables' published by the Dartington Social Research Unit (SRU) and the Washington State Institute for Public Policy (WSIPP).

The following supplementary points should be noted:

- First, wherever possible, the effectiveness of an intervention is expressed in terms of its 'effect size'. This is a measure used to quantify the overall effectiveness of an intervention based on the difference in outcomes between a group receiving the intervention and a control or comparison group not receiving it. As a rough rule of thumb, an effect size of 0.2 is 'small', one of 0.5 is 'medium' and one of 0.8 is 'large'. In other words, the bigger the effect size, the greater the effectiveness of the intervention in question.
- Second, wherever possible, we use the benefit:cost ratio as a summary measure of value for money. A ratio of say 3:1 implies that every £1 invested in an intervention generates benefits to society valued at £3. Where costs and benefits are shown in monetary terms, these are at 2012/13 price levels.

- And third, it is important to note that no monetary value has been put on the health and quality of life gains for the direct beneficiaries of each intervention. The benefits included in a benefit:cost ratio are therefore in addition to the mental health and wellbeing improvements associated with the various programmes. In general, measured benefits include two main elements: (i) reductions in the use of the NHS and other public services because of better mental health, and (ii) increases in earnings associated with the impact of improved mental health on educational attainment. In the case of conduct disorder, there are also benefits to society resulting from reduced offending.

Table 1. Prevalence of mental health conditions among children aged 5-16

Condition	Proportion of children with each condition (%)		
	Boys	Girls	All
Conduct disorder	7.5	3.9	5.8
Anxiety disorders	2.9	3.8	3.3
Depression	0.6	1.1	0.9
ADHD	2.6	0.4	1.5
Other	1.9	0.8	1.3
Any condition	11.4	7.8	9.6

Source: Green *et al.* (2005)

Note: about a fifth of all children with a clinically diagnosable condition have two or more conditions at the same time. This explains why the final row in the table is less than the sum of the individual components. The most common combinations are conduct disorder with an emotional disorder (anxiety or depression) and conduct disorder with ADHD.

2. Conduct disorder

Introduction

Nearly 6% of children aged 5-16 display behavioural problems which are sufficiently severe, frequent and persistent to justify diagnosis as a mental health condition (conduct disorder). These problems are twice as common in boys as girls and are also more widespread among children from disadvantaged backgrounds (Green *et al.*, 2005). Depending on age, problematic behaviours can include persistent disobedience, angry outbursts and tantrums, physical aggression, fighting, destruction of property, stealing, lying and bullying.

When problems start below secondary school age, they have particularly long lasting effects on children's prospects, with around half of affected children going on to have very poor life chances including an increased risk of a wide range of adult mental illnesses (Moffitt, 2006). Around 5% of children aged 5-10 display problems meriting mental health diagnosis (Green, *et al.*, 2005). Compared with their peers, these children are on average:

- Twice as likely to leave school with no qualifications
- 4 times more likely to become drug dependent
- 6 times more likely to die before the age of 30
- 8 times more likely to be placed on a child protection register
- 20 times more likely to end up in prison.

A further 15-20% of children have behavioural difficulties falling short of a diagnostic threshold but which nevertheless carry increased risk of poorer outcomes in later life (Fergusson *et al.*, 2005).

During adolescence, the prevalence of severe behavioural problems increases. Around 7% of young people (8% of boys and 5% of girls) meet the criteria for diagnosis with conduct disorder between the ages of 11 and 16. Those displaying adolescent conduct problems include:

- Individuals who develop problems for the first time during adolescence (this group forms the majority of those with severe behavioural problems during adolescence).
- Individuals whose behaviour was poor before secondary school age and who have missed early interventions.
- Individuals who have not responded to earlier support.

Generally, young people who develop behavioural problems for the first time during adolescence have fewer longstanding problems across their lifetime (Moffitt, 2006). Later starting problems are associated with maturity gap frustrations, peer influence and neurodevelopmental changes taking place during adolescent brain development (Sainsbury Centre for Mental Health, 2009; Johnson *et al.*, 2009). Changes taking place in the brain at this time affect young people's judgement and increase the propensity towards sensation seeking, high-risk behaviour and rule breaking (Johnson *et al.*, 2009). Later starting behavioural difficulties begin to reduce as young people move into their twenties as brain development stabilises and they settle in employment and in relationships.

Most parents with a child meeting the diagnostic threshold for conduct disorder seek advice from professionals (usually teachers and GPs), but only about a quarter get the help they need (Green *et al.*, 2005). This is concerning, as those who display problematic behaviours early in life face greater likelihood of a range of damaging, distressing and costly outcomes if they fail to receive good quality early intervention (Parsonage *et al.*, 2014)

Interventions

Family Nurse Partnerships

Children develop behavioural problems through a combination of temperament-based and environmental risks. The Family Nurse Partnership is a preventive programme targeting risk factors and building strengths in first-time teenage parents. It is based on intensive home visiting by trained nurses from early pregnancy until the child is two. The help offered covers a wide range of issues, including parenting, child behaviour and practical problem solving.

Studies following outcomes for parents and children for over 30 years note a broad range of enhanced outcomes including improvements in children's behaviour (with effect sizes ranging from small to medium), child safety, reductions in substance reliance and reductions in arrests among both children and mothers (Department of Health, 2011).

This intervention is good value for money despite the intensive and relatively long-term nature of contact with parents. The intervention costs £7560 and has a benefit:cost ratio of 2:1 (SRU, 2013). Studies have shown that potential savings from this intervention are larger the longer children and parents are followed up, with improvements spanning many areas of their lives.

Group parenting programmes

Evidence-based group parenting programmes, targeting children showing the first signs of severe behavioural problems, are among the most extensively researched interventions in mental health. There is good evidence that many children aged 3-11 make improvements if parents attend NICE-recommended group parenting programmes (NICE, 2013a). These programmes generate the biggest returns by focusing on children with the highest needs. They run for approximately 10–20 sessions and help parents to develop positive parenting approaches and techniques. These programmes not only make a difference to the children identified with problematic behaviour, they also generate benefits for parents and siblings (Parsonage *et al.*, 2014).

Effect sizes for reducing behavioural problems for these interventions generally fall within a medium range. Improvements in outcomes are larger, the more effectively programmes are implemented (Parsonage *et al.*, 2014). Indeed, poorly implemented programmes delivered by unskilled staff have been noted to make children's outcomes worse not better (Scott, 2008).

These programmes also represent excellent value for money, both for society as a whole and for the public sector. Each programme costs around £1,200 per family, making the cost of early intervention very low compared to the potential benefits. A recent overview of the evidence suggests that returns from investment emerge within a relatively short period of time and provide benefits to society of at least £3 for every £1 invested (Parsonage *et al.*, 2014). Furthermore, the costs of intervention are more than covered even by a narrower consideration of subsequent savings in the public sector, with 60% of the costs of parenting programmes recovered within two years through savings in public expenditure and all costs within around five years. These savings largely accrue to education and health budgets. In later years savings start to build up in the criminal justice system and in the longer term it is this part of the public sector that secures the biggest financial returns (Parsonage *et al.*, 2014).

Individual parenting programmes

Individual parenting programmes such as Parent Child Interaction Therapy demonstrate good results despite higher delivery costs (WSIPP, 2014; NICE, 2013a). On average they cost around £1800 to deliver but have a benefit:cost ratio of 2:1 (SRU, 2013). Consequently, these tend to be less cost effective than group parenting interventions. Furthermore, parents can miss out on the social element of a group-based intervention which can often contribute to improvements in parental wellbeing. However, a small number of parents whose children have more complex needs may benefit more from one-to-one support.

School-based interventions

School-based interventions, such as the Good Behaviour Game, have been shown to improve children's behaviour and outcomes either through focusing on developing children's social and emotional learning or through teaching, modelling and reinforcing pro-social behaviour (although further research is required in this area). The Good Behaviour Game is a universal classroom intervention for children aged 6-8. It aims to reduce aggressive behaviour in order to prevent problem behaviours in middle childhood through to early adulthood (WSIPP, 2014). The effect sizes for these interventions are small to medium in terms of their impact on conduct problems. The cost of delivering the intervention is £108 per child and the estimated benefit: cost ratio is 27:1 (SRU, 2013).

Anti-bullying interventions

Bullying is a common risk factor for poor emotional wellbeing and can be targeted in whole-school interventions. Whole-school programmes with multiple components are more effective than purely curriculum-based programmes (Knapp *et al.*, 2011). One high-quality evaluation of a whole-school anti-bullying intervention found a 21-22% reduction in the proportion of children victimised (Evers *et al.*, 2007). Benefits observed included improvements in the emotional, physical and social health of those bullied, better school attendance and attainment. Evidence from longitudinal data indicates that bullying reduces the lifetime earnings of a victim by around £50,000 on average (Brown & Taylor, 2008).

The cost of delivering the intervention is around £75 per pupil and the benefit:cost ratio is 14:1, based on the impact on future earnings (Knapp *et al.*, 2011). School-based programmes targeting bullying are low cost and, if well implemented, can be highly cost effective even though they reach out to all children in a school.

Aggression Replacement Therapy SRU

Aggression Replacement Training (ART) is a cognitive behavioural-based programme helping to teach aggressive adolescents (aged 12-18) pro-social behaviour. The programme lasts 30 hours in total and is delivered to groups

of 8-12 adolescents three times a week over 10 weeks. It is facilitated by trained practitioners and can take place in a range of environments, from schools to youth justice settings. It has a medium-sized effect on crime.

The cost of delivering this intervention is £1260 and the benefit:cost ratio is 22:1. (WSIPP, 2014)

Functional Family Therapy

Functional Family Therapy (FFT) is a family intervention targeting young people aged 11-18 who are at risk of entering or already in youth justice settings. FFT assesses family behaviours that maintain problematic behaviour, supports more effective family communication, trains family members to negotiate effectively and sets clear rules about privileges and responsibilities. Families receive 30 hours of therapy over the course of 3 months. This intervention has a medium-sized effect on later conduct problems and crime.

The cost of delivering this intervention is £2,555 and the benefit:cost ratio is 12:1. (WSIPP, 2014).

Multi-systemic therapy

Multi-systemic Therapy (MST) is an intensive in-home programme aimed at families with children aged 12-17 who are at risk of or who have a history of arrest. It seeks to empower parents with the skills and resources needed to address the difficulties that arise in raising teenagers and to empower young people to cope with family, peer, school and neighbourhood problems. MST involves approximately 60 hours of contact over four to six months. It has a small to medium effect on later conduct problems/ crime.

The cost of delivering this intervention is £9730 and the benefit:cost ratio is 2:1 (WSIPP, 2014).

Multi-dimensional treatment fostering

Multi-dimensional Treatment Foster Care (MTFC) is an intensive therapeutic foster care placement for adolescents who have problems with chronic anti-social behaviour, emotional disturbance and crime. Foster parents are highly trained and receive ongoing specialist support to help the young person placed with them.

Table 2. Summary of interventions for conduct disorder

Condition	Name of intervention	Age range targeted	Cost per child	Benefit: cost ratio
Conduct disorder in the early years				
	Family Nurse Partnership	< 2 years	£7560	2:1
	Group parenting programme	3-12	£1200	3:1
	Individual parenting programme (e.g. Parent Child Interaction Therapy)	2-14 Years	£1800	2:1
	School-based interventions (e.g. Good Behaviour Game)	6-8 years	£108	27:1
	Whole-school anti-bullying intervention	School-age	£75	14:1
Conduct disorder in adolescence				
	Aggression Replacement Therapy	12-18 years	£1260	22:1
	Functional Family Therapy	11-18 years	£2555	12:1
	Multi-systemic therapy	12-17 years	£9730	2:1
	Multi-dimensional treatment fostering	12-18	£7820	3:1

Both the young person and their birth family also receive interventions and are supported through an intensive network of support. The intervention has a medium to large effect on criminal behaviour and a small to medium effect on preventing teenage pregnancy.

The cost of delivering this intervention is £7820 and the benefit:cost ratio is 3:1. (WSIPP, 2014).

Summary

There is good evidence that, if well implemented, a number of interventions can improve the outcomes of children with early behavioural problems. It has been estimated that children with early conduct disorder are 10 times more costly to the public sector by the age of 28 than other children (Scott *et al.*, 2001) and impose lifetime costs on society as a whole of around £260,000 per child (Parsonage *et al.*, 2014). Costs relating to crime are the biggest single component, accounting for more than two-thirds of the total. These very high long-term costs of early conduct disorder imply that only a small improvement in outcomes is needed to support a value-for-money case for intervention.

A range of programmes also demonstrate positive effects on adolescent conduct problems. Interventions for this age group tend to be more complex and resource intensive than those for younger children, often with a strong focus on mobilising strengths and effecting change in the wider social systems surrounding young people (such as families, schools and friendship groups).

Even though the interventions for adolescent children are more intensive and expensive to deliver than earlier intervention, these programmes continue to represent good value for money, with an average return of around £13 for every £1 invested. US research also shows a consistency of results across both community and custodial settings. Furthermore, the behavioural benefits of interventions are broad, including improved behaviour, reduced substance misuse, reduced risky sex/teenage pregnancy and better relationships with parents (WSIPP, 2014; SRU, 2013).

Overall, the interventions for conduct disorder represent excellent value for money, with the costs of intervention being very low relative to the potential benefits.

3. Anxiety disorders

Introduction

Anxiety disorder covers a range of conditions including generalised anxiety disorder, panic disorder, obsessive-compulsive disorder (OCD), social anxiety disorder, post-traumatic stress disorder (PTSD) and specific phobias (James *et al.*, 2012). They are among the most common childhood psychiatric conditions, occurring in 2.2% of 5-10 year olds and 4.4% of 11-16 year olds (Green *et al.*, 2005). Prevalence is higher among girls than boys.

Anxiety disorders with an onset in childhood often persist into adolescence and beyond. Despite this early onset they are under-recognised in primary care and educational settings and often go untreated (NICE, 2013b). Often, any treatment that does happen is severely delayed. For example, many cases of social phobia are first diagnosed more than 20 years after onset. Even after 20 years of symptoms, only half of individuals with the disorder seek treatment (NICE, 2013b).

Anxiety is frequently co-morbid with other mental health conditions. For example, 40% of those with a diagnosis of social anxiety disorder also have a substance misuse disorder, 30% a mood disorder and 50% another anxiety disorder (NICE, 2013b). Anxiety disorders are associated with suicidal behaviours (Hill *et al.*, 2011), with depression later in life and with poor educational attainment, truancy, dropping out of school early and consequent lower earnings (Green *et al.*, 2005; NICE, 2013b).

Interventions

Group cognitive behavioural therapy

Various forms of Cognitive Behavioural Therapy (CBT) have demonstrated some effectiveness in reducing anxiety in children and young people. CBT for anxiety is based on the idea that anxiety is a learned response that can be unlearned and it addresses problematic thoughts and behaviours related to anxiety. Strategies include modelling, reality exposure, role-playing and relaxation training. A key part of the therapy is systemic desensitisation where an anxious stimulus is paired with a competing relaxing stimulus (James *et al.*, 2012). Generally, CBT is administered by a trained therapist and may involve both parent and child sessions (SRU, 2013). When working with younger children, interventions are sometimes delivered via the parent. Thus parents are provided with the information and taught the skills to deliver behavioural therapy/CBT to their children (NICE, 2013b) and in some cases manage their own anxiety (SRU, 2013). CBT for anxiety may be implemented in group, individual and remote settings.

A NICE review analysing the impact of CBT on social anxiety disorder found that CBT demonstrated effectiveness in reducing anxiety when compared with controls (NICE, 2013b). The effect size was moderate for both clinician-rated recovery and self-rated symptoms. Findings are similar across Cochrane and SRU reviews evaluating anxiety disorders in general. A Cochrane review evaluating the effects of CBT found lower rates of anxiety post-treatment when compared with controls (James *et al.*, 2012). Requiring further research is whether the clinical effectiveness observed in the study described can be sustained long-term and whether CBT is more effective than other 'active' therapies, such as self-help books and psycho-educational interventions.

An evidence-based group CBT programme, working with groups of children of similar ages, costs £252 per person, which makes the cost of intervention very low (SRU, 2013). Its total benefits per participant are estimated at £7,761. For every £1 spent, £31 is generated in measurable benefits (SRU, 2013), mainly in the form of higher earnings and reduced health care costs via reduction in anxiety.

Group parent CBT is also cost-effective, saving £10 for every £1 spent (SRU, 2013). Individual CBT is less cost effective than delivery in group settings and children may miss out on social benefits of the group environment on their anxiety.

School based interventions

Some school-based interventions have been shown to prevent and reduce anxiety in children (Evans *et al.*, 2003). For example, the Social and Emotional Learning programme (SEL) in schools seeks to equip children and young people with skills to manage their emotions, maintain wellbeing and prevent and reduce emotional disorders. There is evidence that, when implemented well, SEL programmes have a positive effect on children's social and emotional skills, behaviour and educational attainment (Durlak, 2011).

Summary

Overall, these interventions are good value for money with the benefits of the intervention outweighing the costs. However, there is limited evidence on value for money for non-CBT based interventions.

Table 3. Summary of interventions for anxiety disorders

Intervention	Age range targeted	Cost per child	Benefit: cost ratio
Group cognitive behavioural therapy for children	5 - 18	£252	31:1
Group cognitive behavioural therapy via parents	5 - 18 (typically 10)	£175	10:1

4. Depression

Introduction

Depression is less common than anxiety, particularly among young children, but is an increasingly prevalent problem in adolescence, affecting 1.4% of all those aged 11-16 (Green *et al.*, 2005). Twice as many girls are affected as boys.

Children with depression are much more likely than other children to be from disadvantaged backgrounds and to have parents with poor physical and mental health (NICE, 2005). More than 95% of major depressive episodes in young people arise in those with long-term psychosocial difficulties such as parental divorce, domestic violence, abuse and school difficulties.

In about 30% of cases, depression in children and young people continues into adulthood, leading to long-term social maladjustment and increased risk of suicide (NICE, 2005).

Most parents of children with depression seek advice regarding their concerns about their child's mental health, but only about a quarter have contact with a children's mental health service (Green *et al.*, 2005).

Interventions

There is evidence that some psychological interventions are effective both in reducing depressive symptoms and in preventing depression from occurring among young people. Cognitive Behavioural Therapy (CBT) has been evaluated as both a preventive and a curative therapy with children and young people.

Individual and group cognitive behavioural therapy for reducing depressive symptoms

CBT can be delivered in a group or individual setting and usually involves sessions with a trained therapist. Session length and duration vary, but commonly they consist of 10 – 20 hourly sessions spread over three months (SRU, 2013). Treatments include various components, such as cognitive restructuring, behavioural activation, emotion regulation, communication skills, and problem-solving (SRU, 2013).

The evidence suggests that CBT for depressed adolescents may be effective in reducing major depressive disorder symptoms and improving global functioning, with effect sizes varying from small for individual CBT to medium for group CBT (SRU, 2013). There is insufficient evidence to show whether these changes are sustained long-term.

CBT delivered in a group setting is estimated to cost £229 per participant, making the cost of intervention low compared with the potential benefits. The total benefits of group CBT are estimated at £7,252 per participant, including higher earnings and lower costs in the NHS and education system. This intervention is excellent value for money, with benefits of £32 for every £1 invested.

Individual CBT is less cost effective than group-based programmes, mainly because of the much higher cost per participant (£2061), but there are some situations where this approach may be more appropriate, for example because the young person/family has very complex needs or access to a group setting is problematic. Overall, the benefits of individual CBT still outweigh the costs by a factor of 2:1.

Cognitive behavioural therapy for preventing depression

Research also indicates that psychological and educational interventions based on CBT may be effective in preventing depression in young people exhibiting sub-threshold depressive symptoms or with risk factors (Merry *et al.*, 2011).

Recognising that depression often occurs after difficult events or is influenced by risks, depression prevention programmes have targeted specific risk factors such as family bereavement, divorce and parental mental illness. Interventions are delivered by mental health professionals or psychiatric social workers who tend to work with the child and their parent/family, providing information and teaching skills around coping, problem-solving and child-parent relationships. Although based

on relatively few studies and small sample sizes, there is limited evidence to suggest that working with the child and parent to tackle specific risks such as bereavement may make a difference to some outcomes including depressive and internalising symptoms (NICE, 2005).

Research into the value for money of prevention programmes is limited and further analysis is required in this area.

Summary

The available evidence suggests that both group and individual CBT for the treatment of children with depression are good value for money.

Table 4. Summary of interventions for depression

Intervention	Age range targeted	Cost per child	Benefit: cost ratio
Group cognitive behavioural therapy	12 – 18	£229	32:1
Individual cognitive behavioural therapy	12 – 18	£2,061	2:1

5. Attention Deficit Hyperactivity Disorder

Introduction

Attention Deficit Hyperactivity Disorder (ADHD) is a behavioural disorder characterised by high levels of inattention, hyperactivity and impulsiveness. The condition affects 2.6% of all boys aged 5-16 and 0.4% of girls in the same age range (Green *et al.*, 2005). Compared with their peers, children and young people with ADHD are:

- Twice as likely to live in a home where neither parent is working.
- Over twice as likely to live with a lone parent.
- Four times as likely to have recognised special educational needs.
- Over twice as likely to have poor physical health, based on parent reports (Green *et al.*, 2005).

ADHD is associated with increased risk of academic failure, dropping out of school, teenage pregnancy and criminality (Storebø *et al.*, 2011). Symptoms frequently persist into adulthood and are associated with poorer employment and earnings outcomes and interpersonal difficulties (Storebø *et al.*, 2011). Almost two thirds of children with ADHD have conduct disorder. The impact on the family is also significant, with increased risk of sibling emotional and behavioural difficulties, parental stress and marital discord (NICE, 2009).

Nearly all parents of children with ADHD seek some form of help because of concerns about their child's mental health and 70% of those consult a teacher (Green *et al.*, 2005). However, only a minority of children receive treatment (NICE, 2009).

Interventions

Psychological therapies

There is some evidence that psychological interventions may have an impact on core ADHD symptoms such as disruptive behaviour. NICE recommend Social Skills Training and Cognitive Behavioural Therapy (CBT) for school-aged children with ADHD (NICE, 2009). Social Skills Training seeks to adjust both the verbal and non-verbal behaviour of children, teaching them to read cues and improve resilience in social situations. The weekly sessions, lasting for 50-90 minutes, are implemented in groups and run for 8-12 weeks. CBT targets problem solving and seeks to reduce impulsive behaviour using techniques such as self-monitoring, modelling, thinking of alternative responses and reinforcement. Individual CBT is delivered weekly for 10-20 sessions with a trained therapist in various settings such as GP surgeries and schools.

A NICE review found that these psychological interventions had moderate beneficial effects on parent-rated ADHD symptoms and conduct problems at the end of treatment and at 3-6 month follow-up when compared with a control group (NICE, 2009). However, teacher-rated measures showed no effect on either conduct problems or ADHD symptoms and outcomes may not transfer from home to school (NICE, 2009). Additionally, positive findings on CBT are not consistent across evaluations (SRU, 2013).

Group parent training

NICE recommends parent training programmes for children with ADHD. Given the strong evidence base for children with conduct disorder, the high prevalence of co-morbid ADHD and conduct disorder and the fact that behavioural disturbances are a core feature of ADHD, NICE argues that it is reasonable to extrapolate these interventions (NICE, 2009).

Parenting programmes teach behavioural management techniques to the parents of children with ADHD. A well-known example is the Incredible Years programme, a group-based, skills-focused intervention working with parents, teachers and children. It aims to prevent, reduce and treat behavioural and emotional problems in children aged 2-12 with a focus on conduct problems. The sessions run for two hours and last for 14-18 weeks. The parenting aspect aims to strengthen parenting skills and increase parental involvement.

The programme has a moderate effect on ADHD symptoms and disruptive behaviour disorder symptoms among children displaying conduct problems (SRU, 2013). Further research is needed to evaluate how psychological and psycho-education interventions may have an impact on other impairing features of ADHD.

Group parenting interventions cost £1,211 per participant while benefits are estimated at £1,654 (SRU, 2013).

Pharmacological intervention

In severe cases of ADHD and when psychological treatments are not working, NICE discusses the use of pharmacological treatments (NICE, 2009). These must be implemented by a qualified health professional with expertise in ADHD and a full physical, social and historical assessment of the individual and family should be undertaken beforehand.

Evidence shows that pharmacological treatment when administered in the correct dosage can be effective in reducing ADHD symptoms, particularly around behaviour (NICE, 2009). It is important to monitor for any side-effects. Drug treatment should always be implemented as part of a comprehensive treatment, for example multimodal therapy.

Multi-modal therapy

Multi-modal therapy (MMT) is an example of a treatment combining medication management and behavioural interventions. Evaluation of group MMT in children with ADHD suggests a small-to-moderate effect on disruptive behaviour but not on ADHD symptoms (SRU, 2013). Group treatment costs £1,495 a year per participant and the benefit: cost ratio is 2:1. However, individual MMT is not cost-effective because of its very high cost (£13,568 per individual). The benefits derived from group-based MMT result mainly from increased earnings and cost savings in the education system (SRU, 2013).

Summary

There is some evidence that parenting programmes for younger children and cognitive behavioural therapies and social skills training may be clinically and cost effective in improving outcomes and reducing burdens related to ADHD. However, there is limited evidence on the effectiveness and value for money of teacher-led interventions and pharmacological interventions.

Table 5. Summary of interventions for ADHD

Intervention	Age range targeted	Cost per child	Benefit: cost ratio
Group parent training (e.g. Incredible Years)	2-12	£1,211	1.4:1
Multi-modal therapy	School-age	£1,495	2:1

6. Other Disorders

There are a number of childhood mental health problems where there is insufficient evidence to demonstrate the effectiveness or value for money of interventions. These include:

- Autistic spectrum disorders
- Self-harm
- Eating disorders

Two other areas are also briefly covered in this chapter: psychosis in adolescence and the risks to children's mental health associated with maternal mental health problems in the perinatal period.

Autistic spectrum disorders

Autistic spectrum disorder (ASD) affects 1.0% of children aged 5-10 and 0.8% of those aged 11-16 (Green *et al.*, 2005). Two-thirds of all children with ASD also have another type of mental health condition and half have an intellectual disability (NICE, 2013c).

Evidence of intervention effectiveness has focused mainly on social functioning as a core feature of ASD. There is emerging evidence that interventions focusing on social communication and developing social skills have positive outcomes for children with ASD. Interventions facilitated by speech and language therapists and involving the carer/parent and child may be effective in improving social communication of young children (NICE, 2013c). For young children there is also evidence that peer-mediated play sessions, between the child with ASD and a typically developing peer, may improve social interaction with other peers (NICE, 2013c). There is limited evidence that Early Intensive Behavioural Interventions (EIBI) may help very young children's social and language development. EIBI programmes are highly intensive and structured, implemented over the first few years of a child's life. The key worker works with the child for 20-40 hours a week and the programme is implemented at home and in preschool/school settings (Reichow *et al.*, 2012).

The quality of evidence on these interventions is generally very low, with poor reporting and reliance on a small number of trials (NICE 2013c; Reichow *et al.*, 2012). Additionally, it is not known whether these interventions are cost effective and further analysis is needed before recommendations can be made.

Self-harm

A 2009 survey found that 13% of young people aged 15-16 self-harmed, with girls 3.5 times more likely to self-harm than boys (O'Connor *et al.*, 2009). The majority of people who self-harm are aged between 11 and 25 years old, with a peak in mid-adolescence (Hawton *et al.*, 2012; Mental Health Foundation, 2006). Self-harm is a major predictor of suicide, with 0.5-1% of those admitted to hospital for self-harm committing suicide the subsequent year (Hill *et al.*, 2011; NICE, 2004a). One in eight young people who self-harm are hospitalised, yet half of those who attend an emergency department are not offered or do not wait for a psychosocial assessment (NICE, 2004a). Self-harm is strongly associated with depression, anxiety, psychosis and alcohol misuse (NICE, 2004a; Hawton *et al.*, 2012).

There is no robust evidence of what works in reducing or preventing self-harm in adolescents. Most of the research has found no positive effects or the quality of evidence has been too poor (Ougrin *et al.*, 2012; NICE, 2004). Recent systematic reviews have indicated interventions that have been trialled once or evaluated in adult samples, but effectiveness has not been established in adolescent populations. Group therapy appeared to reduce self-harm in one set of studies, but this has not been replicated in subsequent trials (NICE, 2004; Ougrin *et al.*, 2012). Based on the paucity of evidence, it is not possible to recommend any intervention for the prevention or treatment of self-harm in adolescents.

Eating disorders

Eating disorders exist across a spectrum. When severe and persistent, they reach the threshold for mental health diagnosis and include conditions such as anorexia nervosa, bulimia or non-specific eating disorders (eating disorders which are severe but do not share clear common characteristics with anorexia and bulimia). Eating disorders are around 10 times more common among young women than men (Health and Social Care Information Centre, 2014). Only 1 in 10 young people receive treatment and only 35% of these get treatment at a specialised facility for eating disorders as recommended (Noordenbos, 2002). Non-specific eating disorders and anorexia are more common during early to mid-adolescence and bulimia is more common during early adult years. Conditions tend to worsen with age, reaching a peak between 16 and 24 (McManus *et al.*, 2009).

The most recent national survey of child mental health indicated that only a relatively small number of 11-16 year-olds met the criteria for diagnosis with an eating disorder (0.4%) (Green *et al.*, 2005), although there is some suggestion that the prevalence of eating disorders has been steadily increasing in recent years (Micali, *et al.*, 2013).

Although relatively few in number, these young people generate particular cause for concern. First, compared with other mental health conditions, eating disorders are a significant cause of death, with standardised mortality ratios five times the population average and with 1 in 20 patients being at risk of premature death. Outcomes are worse for those who present to services late, e.g. during adult years (National Collaborating Centre for Mental Health, 2004). Death is usually the result of starvation, physical complications linked to eating disorders or suicide.

Secondly, the impact of these disorders is frequently long lasting. Anorexia is cited as the third most common chronic illness affecting adolescents (Public Health Service's Office in Women's Health, 2000). About half of sufferers recover. Recovery usually takes place slowly over a few months, but for a small percentage

it takes many years. The average duration of eating disorders as a whole is about six years (Pro Bono Economics & BEAT, 2012).

Thirdly, a proportion of these young people end up in very high-cost settings, sometimes for lengthy periods of time. Indeed, recent NHS data on hospital admissions point to sizeable increases in hospital admissions for eating disorders over recent years. Admissions increased by a quarter between 2011 and 2013 (Health and Social Care Information Centre, 2012 and 2014). The average stay in these high cost settings was 38 days. In 2013, one in 17 patients with an eating disorder stayed in hospital for longer than six months, compared to three in 10,000 of all other admissions. Overall, the cost of eating disorders to the NHS is estimated at £80-100 million a year (Pro Bono Economics and BEAT, 2012).

There is very limited evidence demonstrating the effectiveness of interventions for eating disorders and still less on value for money. Family Therapy, particularly the Maudsley Family Therapy approach, appears the most promising intervention for young people with eating disorders (NICE, 2004b). Despite a recent review of the evidence generally pointing to no notable improvements at the immediate conclusion of family-based therapy, moderate improvements in recovery did emerge six months after treatment had concluded compared with comparison groups (Couturier, *et al.*, 2013). For bulimia and non-specific eating disorders, adapted versions of cognitive behavioural therapy are also recommended (NICE, 2004b).

Psychosis

The treatment of psychosis, irrespective of a patient's age, is funded by adult mental health services. In a significant proportion of cases first onset occurs in adolescence, leading to greater impairment than onset in adulthood and to poor educational and employment outcomes, poor physical and mental health and reduced life expectancy (Hollis, 2000; NICE, 2013d). Although there are only a small proportion of young people with psychosis, prevalence tends to cluster in particular groups. For example, 5% of young people in the youth justice system have psychotic symptoms (Chitsabesan *et al.*, 2006).

Evidence indicates that Early Detection and Early Intervention services for psychosis are effective in preventing full psychosis and reducing relapse (Knapp *et al.*, 2014). Early Detection services involve provision of CBT, psychotropic medication and contact with support workers and psychiatrists. Early Intervention services are provided by multi-disciplinary teams (psychiatrists, support workers, occupational therapists, psychologists etc.) and adopt a holistic way of working, providing psychosocial support. Research indicates that both services are good value for money (Knapp *et al.*, 2014).

Perinatal mental health

Finally, there is growing evidence of the benefits to children's mental health that may result from the improved identification and treatment of maternal mental health problems during the perinatal period, defined as the period during pregnancy and the first year after childbirth. Such problems are very common, affecting up to 20% of women at this time, and are also of major importance as a public health issue, not just because of their impact on the mother but also they have been shown to compromise the healthy emotional, behavioural and cognitive development of the child, with serious long-term consequences. According to a recent study, maternal perinatal depression, anxiety and psychosis together carry a long-term cost to society of about £8.1 billion for each one-year cohort of births in the UK, equivalent to a cost of just under £10,000 for every single birth in the country (Bauer *et al.*, 2014). Nearly three-quarters of this cost (72%) relates to adverse impacts on the child rather than the mother. Some £1.2 billion of the cost is borne by the NHS.

NICE guidance indicates that interventions of at least moderate effectiveness are available to treat the great bulk of maternal mental health problems that arise during the perinatal period (NICE, 2007). Despite this, there is a good deal of evidence to show high levels of under-provision for these problems. For example, about half of all cases of perinatal depression and anxiety go undetected and many of those which are detected fail to receive evidence-based interventions (Bauer *et al.*, 2014). Better management of these problems is almost certainly good value for money from a societal perspective because of the very high costs of inaction, particularly the costs associated with the adverse impact on children's mental health.

7. Implications

The evidence presented in this paper shows that a significant number of interventions are not only effective in improving children's mental health but also demonstrably good value for money. The availability of such interventions applies to all four of the most common mental health conditions that affect children and young people, namely conduct disorder, anxiety, depression and ADHD.

Despite this, only a minority of children with diagnosable disorders receive any form of treatment (Green, *et al.*, 2005) and recent cuts in the funding of children's mental health services (Young Minds, 2014) suggest that, if anything, the treatment gap is now widening rather than narrowing (Health Committee, 2014). One obvious implication of the analysis presented in this report is that any such failure to treat comes at a heavy price, not only for the wellbeing of the children concerned and their families but also for taxpayers and society more generally because of increased future costs.

Under-investment in children's mental health care is compounded by a number of other weaknesses in current service provision. In particular, not all treatments currently provided are evidence-based; interventions are often poorly targeted, failing to reach those who would benefit most; and many programmes are badly implemented, for example because they use inadequately trained staff (Brown *et al.*, 2012). Remedying these weaknesses would significantly increase the overall benefits of existing investment.

Children's mental health services are commissioned and delivered by a wide range of organisations, including the NHS, local authorities, schools and voluntary and community bodies. Aligned arrangements for commissioning, funding and service provision are likely to be crucial for the effective delivery of interventions. For example, perinatal mental health and youth transition services both require adult and child mental health services to work closely together.

Finally, it is clear that there remain important gaps in the evidence base on effectiveness and value for money, particularly relating to such problems as self-harm and eating disorders. As the scale of these problems appears to be on the increase, there is a strong case for further research in these areas.

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